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Methadone, buprenorphine and preferences for opioid agonist treatment: A qualitative analysis

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ABSTRACT

Background: Patients and clinicians have begun to recognize the advantages and disadvantages of buprenorphine relative to methadone, but factors that influence choices between these two medications remain unclear. For example, we know little about how patients' preferences and previous experiences influence treatment decisions. Understanding these issues may enhance treatment engagement and retention.

Methods: Adults with opioid dependence ($n = 283$) were recruited from two integrated health systems to participate in interviews focused on prior experiences with treatment for opioid dependence, knowledge of medication options, preferences for treatment, and experiences with treatment for chronic pain in the context of problems with opioids. Interviews were audio-recorded, transcribed verbatim, and coded using Atlas.ti.

Results: Our analysis revealed seven areas of consideration for opioid agonist treatment decision-making: (1) awareness of treatment options; (2) expectations and goals for duration of treatment and abstinence; (3) prior experience with buprenorphine or methadone; (4) need for accountability and structured support; (5) preference to avoid methadone clinics or associated stigma; (6) fear of continued addiction and perceived difficulty of withdrawal; and (7) pain control.

Conclusion: The availability of medication options increases the need for clear communication between clinicians and patients, for additional patient education about these medications, and for collaboration and patient influence over choices in treatment decision-making. Our results suggest that access to both methadone and buprenorphine will increase treatment options and patient choice and may enhance treatment adherence and outcomes.

1. Introduction

In the United States, methadone is the opioid agonist most studied and most frequently used for agonist therapy of opioid use disorders (Substance Abuse and Mental Health Services Administration (SAMHSA), 2014), and there is ample, longstanding evidence of its effectiveness (Bart, 2012; Mattick et al., 2008). Yet for some people with opioid dependence, there are substantial barriers to methadone treatment and premature discontinuation of treatment is common. Federal regulations restrict use of methadone for opioid dependence to federally approved opioid treatment programs that inhibit access to care, especially in rural communities (Deck and Carlson, 2004). In addition, barriers to engagement and retention in methadone treatment exist, including discordance between patients' goals and motivations for seeking treatment and those of treatment programs (e.g., abstinence), patients' disagreement with program rules, and inconvenient requirements for onsite dosing that interfere with family and work obligations (Reisinger et al., 2009).

The Drug Addiction Treatment Act of 2000 (United States Congress, 2000) allowed physicians to prescribe Schedule 3, 4, or 5 medications for opioid dependence if the Food and Drug

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Administration (FDA) specifically approved a medication for detoxification from or maintenance of opioid dependence. Buprenorphine (a partial opioid agonist), the only medication to meet the DATA 2000 requirements (SAMHSA, 2012), is available as a sublingual film or tablet in two formulations—buprenorphine (Subutex®) and a combination of buprenorphine and naloxone (Suboxone®). Generic versions of the medication are now available. Because buprenorphine can be prescribed in a variety of settings and taken daily at home, its introduction held promise as an alternative to methadone that could increase access to treatment and be more acceptable to patients (Gryczynski et al., 2013). Adoption of buprenorphine was slow, however, in part because its availability was hindered by limits imposed by DATA 2000 on the number of empaneled patients who could receive the medication (United States Congress, 2000) and the type of practitioners able to prescribe it (Fornili and Burda, 2012). In 2011, nearly 10 years after buprenorphine first became available, 43% of US counties had no buprenorphine-waivered physicians (Murphy et al., 2014). Organizational- and practitioner-level barriers also prevented diffusion (Gordon et al., 2011; Green et al., 2014; Hutchinson et al., 2014; Roman et al., 2011; Savage et al., 2012).

Despite these barriers, patients and clinicians have begun to recognize the advantages and disadvantages of buprenorphine relative to methadone, and as restrictions on buprenorphine have been relaxed, its use has spread (SAMHSA, 2014). Factors driving physicians' and patients' decisions between these two medications, however, remain unclear. Likewise, we know little about how opioid-dependent patients' preferences and previous experiences influence treatment decisions. What is known is based on studies of predominantly male heroin users; privately insured patients have been understudied. Understanding the factors that enhance treatment engagement and retention (Institute of Medicine, 2006), while identifying the factors that influence treatment preferences could lead to improved patient-centered treatment for substance use disorders.

As part of a larger study examining the adoption of buprenorphine, we conducted semi-structured interviews with a sample of individuals with opioid dependence. Using text from these interviews, we examined: (1) participants' comparisons of buprenorphine vs. methadone treatment; (2) interactions with clinicians about treatment options; and (3) choices participants made about opioid agonist therapy.

2. Methods

The Treatment Options Study (TOP) was a mixed-methods study of the adoption of buprenorphine in two health plans that provide integrated, comprehensive inpatient and outpatient care, including addiction and mental health treatment. This paper's qualitative analysis of patient interviews complements prior analyses of service use (McCarty et al., 2010), costs of care (Lynch et al., 2014), and clinician and health system administrator perspectives (Green et al., 2014).

2.1. Settings

Settings were Kaiser Permanente Northwest (KPNW), which served about 480,000 members in Northwest Oregon and Southwest Washington, and Kaiser Permanente Northern California (KPNC), which served about 3.2 million members in Northern California's San Francisco Bay and Central Valley Regions. The two settings differed in coverage of medication assisted treatment and rates and methods of adoption of buprenorphine (Green et al., 2014). Prior to FDA approval of buprenorphine, the standard of care at KPNW was to provide methadone treatment though local methadone clinics. At the time of the study, KPNW had one chief of addiction medicine who championed use of buprenorphine but only two of 11 addiction medicine clinics had physicians that held buprenorphine waivers. The region had participated in a clinical trial using buprenorphine. As a result of its smaller size, streamlined administration, and prior experience with buprenorphine, adoption at KPNW advanced more efficiently, and a greater proportion of opioid-dependent patients received buprenorphine earlier in the adoption process when compared with KPNC (Green et al., 2014). At KPNC, each of 27 clinics had its own chief of chemical dependency services, and the region had no prior experience with methadone or buprenorphine, so buprenorphine adoption proceeded slowly until a clinical leader promoted its diffusion. Methadone was not covered (though many patients in the sample had experience with the medication).

2.2. Eligibility

Eligible individuals were 18 years or older, and had two or more diagnoses of opioid dependence in the year prior to recruitment (2006–2009). Diagnoses were identified using electronic medical record (EMR) data. A minimum of two diagnoses, on two separate dates, was required for study inclusion. The goal of this strategy was to reduce risk of including individuals whose diagnoses resulted from coding errors. All participants provided informed consent prior to participation; the study was approved and monitored by the KPNW and KPNC Institutional Review Boards. We excluded individuals who were cognitively impaired or otherwise unable to provide consent.

2.3. Recruitment

We reviewed EMR data monthly to identify patients with opioid dependence diagnoses. We sent recruitment letters ($n = 965$) to the chiefs of addiction medicine/chemical dependency and asked them to sign and return letters for those patients deemed suitable for recruitment (examples of unsuitable patients were those who were unavailable, unable to consent, or whose present condition precluded study participation). We dropped 226 patients (23%) from the study at this stage. The recruitment letters invited patients to participate in a single 1-h in-person interview; a toll-free phone number was provided for scheduling an interview or declining participation. We telephoned patients who did not call us within one week to assess interest in the study and to schedule interviews. Thirty-two letters were never mailed because recruitment enrollment goals were met prior to sending them. Of the 707 letters mailed, 277 patients (39%) were never reached, 94 (13%) refused to participate, and 53 (7%) were ineligible (e.g., had moved out of area, were non-English speakers, were unable to provide consent). We enrolled 283 individuals (40% of the eligible sample).

2.4. Interview content

We used semi-structured interviews to understand participants' prior experiences with treatment for opioid dependence, knowledge of medication options, preferences for treatment (including medications for detoxification and for maintenance), experiences with treatment for chronic pain in the context of problems with opioids, barriers to obtaining addiction treatment, and costs of addiction treatment. Interviews were audio-recorded and transcribed verbatim.

2.5. Data analysis

Transcripts were coded using Atlas.ti software (Friese, 2011). After about 10 percent of the interviews were completed we developed a coding scheme. Investigators and interviewers began with an independent, systematic, reading and coding of a subset of tran-

scripts using open coding techniques. We then compared codes across coders, developed common descriptive codes, and specified definitions for each code. Following this process, we coded additional transcripts, adding and refining codes and code definitions as needed, and adding interpretive codes until the coding scheme provided the necessary codes to classify most interview content. We coded transcripts continuously during the study, with coders meeting weekly to review a common section of interview text, discuss how it was coded, and resolve discrepancies. We also completed check coding on 34 transcripts (12%); coders were in agreement 80.9% of the time. A larger number of interviews was planned to examine changes over time but interviews were stopped at 283 when investigators concluded saturation had been reached and no new information was being generated. We used a modified grounded theory approach (Glaser and Strauss, 1967; Saldaña, 2009; Strauss and Corbin, 1998), including constant comparative methods (Glaser and Strauss, 1967), to find patterns in the text. For the analyses reported here, the codes "medications—buprenorphine," "medications—methadone," and "medications—feelings about" were reviewed for emergent patterns and themes, as well as contradictory examples for each identified theme.

In addition to qualitative analyses, we examined data from structured interview items to determine if participants with both buprenorphine and methadone treatment experiences had a strong preference for one versus the other. Participants were asked to report attitudes and beliefs about each medication on a 12-item semantic differential scale with items based on the Theory of Planned Behavior (Ajzen, 1991). We analyzed the five most relevant items. Two assessed attitudes, including: "For me, taking [medication] to treat my dependence on heroin or other opiates is. . . bad/good, useless/useful." Three assessed beliefs rated as likely/unlikely, including "I believe [medication]. . . is an effective opiate treatment, blocks craving for opiates, and reduces withdrawal symptoms." We used SPSS v.22 (IBM) for univariate and bivariate statistics. Using 2-tailed paired *t*-tests, we compared mean scores measuring attitudes and beliefs toward buprenorphine and methadone.

3. Results

3.1. Participant characteristics

Mean age of participants ($N = 283$) was 40 years (SD = 12.2) and did not differ from mean age of eligible participants in the integrated health systems. Just over half were women (55.5%), slightly over representing women in the eligible population. Other data (e.g., race/ethnicity) were not available in the health system records for comparison of the recruited sample to the eligible membership. Among interview participants 56% reported some college or technical schooling (56%), while 56% were also employed. Almost one in three participants (30%) reported that their health was fair or poor. Prescription drugs were the primary source of past-year opioid problems (61% versus 20% heroin). More than half of study participants (56%) had prior lifetime experience with buprenorphine treatment; 42% with prior methadone treatment; and 22% with both medications. Of participants currently receiving treatment (past 90 days), 29% were receiving buprenorphine and 20% were receiving methadone. Most participants reported that their most recent addiction treatment was in an outpatient (61%) rather than an inpatient (6%) setting (Table 1).

Table 1
Participant demographic, treatment, and health characteristics ($N = 283$).

Characteristic	Valid *n*	(*n*)	(%)
Female	281	156	55.5
Hispanic ethnicity	282	25	8.9
Race[a]			
Native American	283	12	4.2
Asian	283	4	1.4
Native Hawaiian	283	3	1.1
African American	283	13	4.6
White	283	254	89.8
Education	282		
High school or less		76	27.0
Some college or technical school		157	55.7
College or post college		49	17.3
Currently employed	281	158	56.2
Past-year problems[a]			
Prescription opioids	283	173	61.1
Heroin	283	57	20.1
Crack/cocaine	283	27	9.5
Marijuana	283	22	7.8
Methamphetamine	283	17	6.0
Alcohol	283	45	15.9
Tobacco	283	102	36.0
Lifetime opioid use[a]			
Prescription opioids	282	268	95.0
Heroin	282	131	46.5
Both	282	123	43.6
Any intravenous drug use	280	119	42.5
Lifetime opioid treatment[a]			
Methadone	270	114	42.2
Buprenorphine	272	153	56.3
Both	269	59	21.9
Neither	269	64	23.8
Fair or poor health	283	85	30.1
Pain[a]			
Experience pain daily or constantly	280	149	53.3
Severe or very severe in past 4 weeks	283	49	17.3
Interfered with work quite a bit or extremely in past 4 weeks	281	65	23.1

[a] Items were not mutually exclusive and will not necessarily sum to 100%.

3.2. Emergent themes

Our qualitative analysis revealed seven overarching areas of consideration for opioid agonist treatment decision-making: (1) awareness of treatment options; (2) treatment expectations and goals; (3) prior experience; (4) need for accountability and structured support; (5) preference to avoid methadone clinics or stigma; (6) fear of continued addiction and perceived difficulty of withdrawal; and (7) pain control among those with chronic pain. We do not report the number or proportion of participants endorsing themes because access to buprenorphine was limited by regulations that changed over the course of the study, and because adoption proceeded differently and at different paces in the two health plans (Green et al., 2014; Lynch et al., 2014). In addition, methadone treatment was covered in only one of the two plans. These changes and differences affected access to medication-assisted treatment and thus patient choices. In this context, reporting proportions could lead to misinterpretations, so we have not done so.

3.2.1. Theme 1: Patients may not be aware of treatment alternatives. Patients were sometimes unaware of the availability of medication assisted treatment options for addressing opioid dependence. In addition, some participants reported that they were not provided with information about the choices they may have had. For example:

> *Like the first time I went into treatment, I think more or less they just put me on Suboxone. I mean, I didn't even really know of any options. I didn't know I could have done the methadone thing, or they didn't tell me that. . . it would have been nice to have that option.*

Another participant commented:

Interviewer: And you used [buprenorphine] as a detox. Have you ever considered changing that and using buprenorphine as a maintenance treatment, or a methadone maintenance, or anything like that?

Participant: You can do that? I was never told that you could continue using [buprenorphine].

It should be noted that this participant was interviewed during the era when waived physicians were restricted to 30 patients who could receive buprenorphine thus limiting their ability to use it as a maintenance treatment.

3.2.2. Theme 2: Treatment expectations and goals may differ between clinicians and patients. Our interviews highlighted the need for clear communication regarding detoxification versus maintenance therapies, and rationales for different treatments. This may be particularly important when a patient's goal is to be drug-free:

Interviewer: Tell me about how you came to the decision to go on [buprenorphine].

Participant: Well. . . I told my doctor I wanted off methadone, you know. And they tried to get me off slowly. I got down to like some outrageously low amount, but I was sick all the time. And I said, isn't there a way we can just get this over with? Can I just go in the hospital and, you know, get this over with? And I thought they understood that I wanted off. And I did go to the hospital, and they gave me the [buprenorphine]. And I thought they were using it to detox me, so I took it

Interviewer: So you thought you would be taking the [buprenorphine] for a brief period of time?

Participant: Yeah! I thought it was gonna be a week or two and that was going to be it, and here it is a year later.

She [doctor] felt very strongly that I should go on methadone. I felt very strongly that I did not want to go on methadone; that I wanted to do a [buprenorphine] detox, because. . . I wanted to get off entirely.

3.2.3. Theme 3: Prior experiences with buprenorphine or methadone influence treatment decisions and expectations. Participants described how negative experiences with methadone (including non-prescribed use) led them to consider buprenorphine. Likewise, patients described how experiences with buprenorphine influenced their decision to choose methadone.

I've taken methadone. I've taken it as not a prescription thing. Methadone is kind of nice, but I'd say the buprenorphine is actually far better.

In the past 4 years I've tried to get sober probably five or six times with. . .methadone. . .but the most recent time was when I got on [buprenorphine] and it seemed to work so far. . . It's like a hundred times better than any other experience I've had.

. . . I've been on buprenorphine a couple of times. The last time I was on it, it just didn't help me enough and I had heard about methadone. . .so I brought it up to one of the addiction specialists here and wanted to know if I could go on a methadone program. That's how I got on it.

When we examined structured responses among participants who had experience with buprenorphine and methadone ($n = 74$), we found participants favored buprenorphine (see Table 2). Significantly greater numbers of individuals believed that buprenorphine was "good", more "useful" than methadone in treating opioid dependence, more effective than methadone, including by blocking opioid cravings.

3.2.4. Theme 4: Accountability and structure facilitate treatment engagement for some, create barriers for others. Some patients, as well as clinicians (Green et al., 2014), described a need for additional accountability to support treatment efforts.

I had tried [buprenorphine] before and... I just kind of felt that I needed more structure, because I would tend to use that kind of as a crutch... they would send me out with. . .a 30-day supply and I was like...I can use [drugs] today and I still have this tomorrow, and that's kind of what I would do with [buprenorphine].

I'd struggled with. . .abstinence while I was on [buprenorphine] and finally the counselors were just like, you know, this isn't working out... They obviously saw I needed more structure...I was still able to use [drugs]. . .they gave me a bottle of thirty day prescription and it was basically up to me what I wanted to do. . .they'd given me a couple of chances on it, because I'd had some dirty UAs, and stuff like that. And then they were like, you're probably better off going onto the methadone, and so I did. And, actually, they were right

At the same time, the requirements of daily dosing and the restrictive structure of monitored methadone maintenance created a treatment obstacle for others.

Interviewer: Have you thought about changing from [buprenorphine] to something else like methadone?

Participant: I think I'd probably do better with methadone as far as cravings go, because I think it's definitely a stronger opioid. But at the same time, I wouldn't want to just get dependent on methadone. If you were to give me a choice, if I could have like an outpatient prescription for methadone, that would be ideal. I just don't want to go there every single day to that place.

Interviewer: So you think the medication itself might be a good idea, but it's the structure that comes along with methadone that wouldn't work for you?

Participant: Yeah. I don't think it would actually work with my schedule. . .my job should be at the top of my list of importance.

3.2.5. Theme 5: Desire, among some, to avoid methadone clinics or associated stigma. For some, the desire to avoid methadone clinics, or the people who receive services at them, made buprenorphine a much more attractive treatment option. A similar desire to avoid clinics and their clientele among those already on methadone was also common.

When you take [buprenorphine], it's in the privacy of your own home. You don't have to go to some public clinic. . .what I would consider a finishing school for drug junkies... It was practical because I didn't have to get up at 5:00 am and go to a methadone clinic. . .[Buprenorphine], I don't care what anybody else says, I think it's the best thing that ever happened to me... It made me feel normal.

If I could have a prescription for [buprenorphine]... I could take that pill every day and that would be it. I wouldn't have to go to the methadone clinic where everybody is NOT there to get clean. . .most of them are there using drugs still. I wouldn't have to stand in a

Table 2
Means and paired-sample *t*-test results for attitudes and preferences among individuals who have been treated with both buprenorphine and methadone.

	(*N*)	Buprenorphine		Methadone		(*t*)	(*p*)
		Mean	SD	Mean	SD		
Is bad/good	74	6.30	1.54	4.08	2.35	5.84	<.001
Is useless/useful	74	6.12	1.68	4.49	2.26	4.43	<.001
Is effective	74	6.30	1.43	4.66	2.17	5.00	<.001
Blocks opioid cravings	74	6.26	1.50	5.26	2.06	3.47	.001
Reduces opioid withdrawal symptoms	74	6.47	1.27	6.36	1.28	.49	.624

Table 2 contains only individuals who reported being treated with both buprenorphine and methadone in order to test attitudes and preferences among individuals who had experience with both. Response options were on a 7-point scale. The first two items were anchored with 1 = bad/useless and 7 = good/useful. The remaining three items 1 = unlikely and 7 = likely. Items included in this Table were asked regarding methadone and then asked again regarding buprenorphine.

thirty-minute line while being tempted to use···I could do it on my own. I wouldn't have to be around the drug culture.

3.2.6. Theme 6: Fear of continued addiction and perceived difficulty of withdrawal among people who have a goal to be drug-free. Some participants opted for buprenorphine based on their perception that methadone was highly addictive and withdrawal was more difficult compared to buprenorphine withdrawal.

Participant: When I was on buprenorphine, I wish I would have just stuck out the detox and not gone on the methadone, just because now I feel like I'm addicted to a whole other thing like I was in the beginning. I think that before people get on the methadone they should try buprenorphine first and try to make that work, because it's not. . .as severe a problem as methadone. It's a lot easier to get off buprenorphine than it is methadone

Interviewer: So you were detoxing off buprenorphine and that was unpleasant enough for you that you felt like you needed to go on the methadone?

Participant: Yeah, but I had been on and off of it for a couple of years or so. I wish I had just stuck it out···That's not to say that methadone hasn't helped my life, because it has. But, at the same time, withdrawal off of that is going to be really bad. . .

Interviewer: Have you considered actually changing from buprenorphine to methadone?

Participant: Oh, no! Absolutely not!···Everyone I know on methadone is like hooked for life. It's a hideous, HIDEOUS, hideous withdrawal···This is a much better drug to use.

Interviewer: . . .it seems that your program was a drug-free program, so did you ever consider changing to a maintenance program?

Participant: No, because I feel that that really isn't any different from me maintaining on heroin. Sure. . .it's less expensive, but to me I know that methadone is really hard to detox off of, and I know people who still used on methadone and just had an even bigger habit after being on maintenance. So, methadone, I've never considered, I would never consider.

3.2.7. Theme 7: Among patients with chronic pain, pain control is an important consideration. Patients with chronic pain appeared more willing to accept long-term maintenance medications if they believed their pain would be controlled.

Well, I did not want to do methadone. . .just from past experiences of people I know on methadone. . . Actually, I did want to do [buprenorphine] from what I had heard about it and because I had sort of a fear of the methadone in the beginning. . . Finally, when I talked to my counselor about [buprenorphine] she thought that would be a great idea. So she set me up with an appointment . . .in Addiction Medicine. I went to see her and she didn't feel [buprenorphine] would be the answer for me because I do have chronic pain. She said [buprenorphine] doesn't really take care of that sort of problem with pain. . .she was just pretty strong on thinking that the methadone would be an answer for me. Her and I discussed it at length and I told her why I felt that way exactly from the experience of especially one person I know. And, you know, she was respectful of that... I thought about what[she] had said as far as the pain. . .[and] decided to try the methadone

4. Discussion

Our results reinforce and extend a small literature on opioid-dependent patients' preferences for medication-assisted treatment. Consistent with earlier research documenting decision processes regarding treatment for opioid dependence were our findings that prior experience with medications, fear of continued addiction or withdrawal (particularly with methadone), and desire to avoid methadone and its associated stigma all can play an important role in treatment decision-making (Gryczynski et al., 2013; Pinto et al., 2010). Personal experiences were central in decisions to seek buprenorphine treatment and negative views toward methadone and fear of methadone withdrawal strongly influenced preference for buprenorphine (Gryczynski et al., 2013), as did methadone-related stigma (Pinto et al., 2010). In our sample, attitudes towards both medications, among those who had experience with both, provided further evidence of the general favorability of buprenorphine over methadone. Finally, as others have also noted, we found that treating pain with co-occurring substance use remains a challenge both for patients and clinicians (Neumann et al., 2013; Weiss et al., 2014).

We identified needs for better clinician-patient communication, improved patient education, and increased collaboration and partnership that empower patients with opioid dependence to actively engage in treatment-related decision-making. Differences in access to and availability of buprenorphine and methadone within the two health plans, and over time, may have contributed to lack of patient information, and likely restricted a full range of choices. Nevertheless, participants in this sample were often unaware of, or undereducated about, treatment alternatives. Others who did understand existing treatment options did not always get to choose medications. Barriers common to shared decision-making in other domains, such as lack of time (Legare et al., 2008) or the inherent tension created when patient goals contradict evidence-based treatment recommendations (e.g., preference for shorter treatment duration) may also be factors in opioid agonist treatment decisions. Nevertheless, when patient concerns, expectations, or preferences remain unaddressed or unrecognized, or when patients lack choices or a voice in decision-making, they may be less likely to engage in, and sustain, treatment (Institute of Medicine, 2006).

Treatment decision-making discussions provide opportunities to educate patients about the course of opioid dependence and the neurobiological rationale and evidence supporting long-term relapse prevention strategies (Bart, 2012). Discussions about the chronic and relapsing course of substance dependence (McLellan et al., 2000) and patients' ongoing vulnerability to opioids are valuable because they may help patients to appreciate and understand the goals and implications of different treatment strategies (e.g., detox versus maintenance) and to weigh the associated benefits and risks so they can participate in treatment-related decision-making. Discussions that take into account past experiences with opioid agonist medications (including non-prescribed use), examine expectations regarding addiction potential and withdrawal, clarify anticipated duration of treatment, and explore the need for monitored support may improve clinician-patient relationships, treatment goal concordance between clinicians and patients, and treatment adherence. Further, these enriched shared decision-making discussions are recommended in recent guidelines endorsed by the American Society of Addictions Medicine (Kampman and Jarvis, 2015). Given that retention in opioid treatment is generally low, and that long-term abstinence following discontinuation of medication-assisted treatment is unusual (Kornor and Waal, 2005), clinicians that engage patients in collaborative, long-term treatment planning may foster better outcomes (Institute of Medicine, 2006). Such partnerships may be particularly important for patients with ongoing chronic pain, for whom medication options may be restricted and strategies may require greater coordination with other health care providers. In the context of chronic illnesses that require long-term treatment decisions, like chronic pain and opioid dependence, shared decision-making is effective for reaching treatment agreement (Joosten et al., 2008). As health care systems place greater emphasis on patient-centered care, and as the need for effective substance use treatment continues to grow, understanding patients' perspectives regarding treatment will become increasingly important as will the need for health systems and insurers to ensure availability and coverage of medication options that are likely to appeal differently to different subgroups.

4.1. Limitations

Both a limitation and strength of our data is that our sample represents two private, integrated health plans. The value gained by the inclusion of privately insured participants, a population that has not been represented in existing research, balances limitations in generalizability to other treatment systems and those related to sample characteristics (e.g., only insured participants engaged in ongoing care).

4.2. Conclusions

The emergence of buprenorphine as a viable pharmacotherapy for individuals with opioid dependence offers new opportunities for patients and clinicians to negotiate individualized treatment plans. The availability of medication options increases the need for clear communication between clinicians and patients, for additional patient education about these medications, and for collaboration and patient influence over choices in treatment decision-making. The rise of prescription opioid misuse, particularly among individuals with chronic pain, presents additional complexities and heightens the need for flexible treatment options that may require unprecedented coordination among medical specialty departments. Our findings do not suggest that buprenorphine will – or should – replace methadone for treating opioid dependence. Despite their pharmacological overlap, these medications are not necessarily perceived as interchangeable from patients' perspectives. Our results show that access to both opioid agonists will increase appropriate treatment options. Patient choice, when supported in the context of shared decision-making, may lead to better adherence and better outcomes.

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Contributors

Bobbi Jo Yarborough led the qualitative analysis, interpreted the results, and drafted the manuscript. Scott P. Stumbo contributed to the qualitative analysis and revisions of the text. Jennifer Mertens participated in the qualitative analysis and interpretation. Dennis McCarty and Carla A. Green participated in the qualitative analysis and interpretation. Drs. McCarty, Weisner, and Green designed the study and contributed to critical revisions of the text.

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References

Ajzen, I., 1991. The theory of planned behavior. Organ. Behav. Hum. Decis. Process 50, 179–211.

Bart, G., 2012. Maintenance medication for opiate addiction: the foundation of recovery. J. Addict. Dis. 31, 207–225.
Deck, D., Carlson, M.J., 2004. Access to publicly funded methadone maintenance treatment in two western states. J. Behav. Health Serv. Res. 31, 164–177.
Fornili, K., Burda, C., 2012. Buprenorphine prescribing: why physicians aren't and nurse prescribers can't. J. Addict. Nurs. 20, 218–226.
Friese, S., 2011. User's Manual for ATLAS.ti 6.0. ATLAS.ti Scientific Software Development GmbH, Berlin.
Glaser, B.G., Strauss, A.L., 1967. The Discovery Of Grounded Theory: Strategies For Qualitative Research. Aldine Publishing Company Chicago.
Gordon, A.J., Kavanagh, G., Krumm, M., Ramgopal, R., Paidisetty, S., Aghevli, M., Goodman, F., Trafton, J., Liberto, J., 2011. Facilitators and barriers in implementing buprenorphine in the Veterans Health Administration. Psychol. Addict. Behav. 25, 215–224.
Green, C.A., McCarty, D., Mertens, J., Lynch, F.L., Hilde, A., Firemark, A., Weisner, C.M., Pating, D., Anderson, B.M., 2014. A qualitative study of the adoption of buprenorphine for opioid addiction treatment. J. Subst. Abuse Treat. 46, 390–401.
Gryczynski, J., Jaffe, J.H., Schwartz, R.P., Dusek, K.A., Gugsa, N., Monroe, C.L., O'Grady, K.E., Olsen, Y.K., Mitchell, S.G., 2013. Patient perspectives on choosing buprenorphine over methadone in an urban, equal-access system. Am. J. Addict. 22, 285–291.
Hutchinson, E., Catlin, M., Andrilla, C.H., Baldwin, L.M., Rosenblatt, R.A., 2014. Barriers to primary care physicians prescribing buprenorphine. Ann. Fam. Med. 12, 128–133.
Institute of Medicine, 2006. Improving the quality of health care for mental and substance-use conditions. Institute of medicine, committee on crossing the quality chasm: adaptation to mental health, addictive disorders, board on health care services, Washington, DC.
Joosten, E.A., DeFuentes-Merillas, L., de Weert, G.H., Sensky, T., van der Staak, C.P., de Jong, C.A., 2008. Systematic review of the effects of shared decision-making on patient satisfaction, treatment adherence and health status. Psychother. Psychosom. 77, 219–226.
Kampman, K., Jarvis, M., 2015. American society of addiction medicine (ASAM) national practice guideline for the use of medications in the treatment of addiction involving opioid use. J. Addict. Med. 9, 358–367.
Kornor, H., Waal, H., 2005. From opioid maintenance to abstinence: a literature review. Drug Alcohol Rev. 24, 267–274.
Legare, F., Ratte, S., Gravel, K., Graham, I.D., 2008. Barriers and facilitators to implementing shared decision-making in clinical practice: update of a systematic review of health professionals' perceptions. Patient Educ. Couns. 73, 526–535.
Lynch, F.L., McCarty, D., Mertens, J., Perrin, N.A., Green, C.A., Parthasarathy, S., Dickerson, J.F., Anderson, B.M., Pating, D., 2014. Costs of care for persons with opioid dependence in commercial integrated health systems. Addict. Sci. Clin. Pract. 9, 16.
Mattick, R.P., Kimber, J., Breen, C., Davoli, M., 2008. Buprenorphine maintenance versus placebo or methadone maintenance for opioid dependence. Cochrane Database Syst. Rev., April 16 (2): CD002207.
McCarty, D., Perrin, N.A., Green, C.A., Polen, M.R., Leo, M.C., Lynch, F., 2010. Methadone maintenance and the cost and utilization of health care among individuals dependent on opioids in a commercial health plan. Drug Alcohol Depend. 111, 235–240.
McLellan, A.T., Lewis, D.C., O'Brien, C.P., Kleber, H.D., 2000. Drug dependence, a chronic medical illness: implications for treatment, insurance, and outcomes evaluation. JAMA 284, 1689–1695.
Murphy, S.M., Fishman, P.A., McPherson, S., Dyck, D.G., Roll, J.R., 2014. Determinants of buprenorphine treatment for opioid dependence. J. Subst. Abuse Treat. 46, 315–319.
Neumann, A.M., Blondell, R.D., Jaanimagi, U., Giambrone, A.K., Homish, G.G., Lozano, J.R., Kowalik, U., Azadfard, M., 2013. A preliminary study comparing methadone and buprenorphine in patients with chronic pain and coexistent opioid addiction. J. Addict. Dis. 32, 68–78.
Pinto, H., Maskrey, V., Swift, L., Rumball, D., Wagle, A., Holland, R., 2010. The SUMMIT trial: a field comparison of buprenorphine versus methadone maintenance treatment. J. Subst. Abuse Treat. 39, 340–352.
Reisinger, H.S., Schwartz, R.P., Mitchell, S.G., Peterson, J.A., Kelly, S.M., O'Grady, K.E., Marrari, E.A., Brown, B.S., Agar, M.H., 2009. Premature discharge from methadone treatment: patient perspectives. J. Psychoact. Drugs 41, 285–296.
Roman, P.M., Abraham, A.J., Knudsen, H.K., 2011. Using medication-assisted treatment for substance use disorders: evidence of barriers and facilitators of implementation. Addict. Behav. 36, 584–589.
Saldaña, J., 2009. The Coding Manual For Qualitative Researchers. Sage, London.
Savage, S.A., Abraham, A.J., Knudsen, H.K., Rothrauff, T.C., Roman, P.M., 2012. Timing of buprenorphine adoption by privately funded substance abuse treatment programs: the role of institutional and resource-based interorganizational linkages. J. Subst. Abuse Treat. 42, 16–24.
Strauss, A., Corbin, J., 1998. Grounded theory methodology: an overview. In: Denzin, N.K., Lincoln, Y.S. (Eds.), Strategies of Qualitative Inquiry. Sage Publications, Thousand Oaks, California, pp. 158–183.
Substance Abuse and Mental Health Services Administration (SAMHSA), 2012. CSAT Buprenorphine Information Center, Rockville, MD.
Substance Abuse and Mental Health Services Administration (SAMHSA), 2014. The N-SSATS Report: Trends In The Use Of Methadone And Buprenorphine At Substance Abuse Treatment Facilities: 2003 To 2011. Rockville, MD.
United States Congress, 2000. Drug Addiction Treatment Act (DATA 200) Title XXXV, Section 3502 of the Children's Health Act of 2000. http://buprenorphine.samhsa.gov/fulllaw.html. accessed on.
Weiss, R.D., Potter, J.S., Griffin, M.L., McHugh, R.K., Haller, D., Jacobs, P., Gardin, J., Fischer 2nd, D., Rosen, K.D., 2014. Reasons for opioid use among patients with dependence on prescription opioids: the role of chronic pain. J. Subst. Abuse Treat. 47, 140–145.