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Authors
Bromley, Elizabeth
Tarn, Derjung M
McCreary, Michael
et al.

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Attitudes About Medications for Alcohol Use Disorder Among Individuals with Serious Mental Illness: A Health Belief Model Analysis

Elizabeth Bromley, M.D., Ph.D.[1,2], **Derjung M. Tarn, M.D., Ph.D.**[3], **Michael McCreary, M.P.P.**[1], **Brian Hurley, M.D., M.B.A.**[3,4], **Allison J. Ober, M.S.W., Ph.D.**[2], **Katherine E. Watkins, M.D., M.S.H.S**[2]

[1]Center for Health Services and Society, Jane and Terry Semel Institute, Department of Psychiatry and Biobehavioral Sciences, David Geffen School of Medicine at UCLA, 10920 Wilshire Blvd, Suite 300, Los Angeles, CA 90024

[2]RAND Corporation, 1776 Main Street, Santa Monica, CA 90401

[3]Department of Family Medicine, David Geffen School of Medicine at UCLA, 10880 Wilshire Blvd., Suite 1800, Los Angeles, CA 90024

[4]Los Angeles County Department of Health Services, 313 N Figueroa Street, Los Angeles, CA 90012

Abstract

Background—Medications for alcohol use disorder (MAUD) are underutilized in mental health settings. Increasing use of MAUD requires increasing both the availability of these medications and the demand by individuals who could benefit. Few studies have explored the views of individuals with severe mental illness and alcohol use disorder about MAUD. We sought to examine, among individuals treated in publicly funded community mental health clinics, perceived need for and attitudes toward MAUD.

Methods—We conducted 8 focus groups with 87 participants treated in public mental health clinics in Los Angeles County. We aimed to include individuals with a current or past AUD diagnosis and individuals helping others (e.g., a family member) who drink. We examined responses using domains associated with the Health Belief Model to identify factors that shape acceptance of MAUD.

Results—Participants were 53% female; most were minorities. Average age was 47 years (SD=11). Twenty-four reported never drinking, 13 of whom had a current or past diagnosis of

Corresponding author: Elizabeth Bromley ebromley@mednet.ucla.edu.
Bromley: Conceptualization, Methodology, Validation, Investigation, Data Curation, Writing – Original Draft, Writing – Review & Editing **Tarn**: Methodology, Writing- Original Draft, Writing – Review & Editing **McCreary**: Investigation, Data Curation, Resources, Visualization **Hurley**: Supervision, Writing – Review & Editing **Ober**: Supervision, Project Administration, Writing – Review & Editing **Watkins**: Conceptualization, Methodology, Supervision, Funding Acquisition

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AUD. Twenty-two reported drinking 4 or more times per week. Three-quarters had not heard of naltrexone. Participants understood that alcohol use has severe adverse consequences and perceived themselves to be highly susceptible to these consequences. Regarding attitudes toward MAUD, participants described an internal locus of control (e.g., their own desires, actions, and effort) as central to addressing problem drinking; this shaped their views that MAUD would have only modest benefits and potentially high burden. Those individuals who had tried MAUD expressed the most optimism about its effectiveness.

Conclusions—Participants worried MAUD would impede the development of self-control over drinking by fostering dependence on medication and undermining self-discipline. Client education and counseling that emphasizes MAUD as a tool to build clients' self-control may increase demand for these medications in mental health settings.

Keywords

medication-assisted treatment; medications for addiction treatment; co-occurring disorders; alcohol use disorders; severe mental illness; Health Belief Model

1. INTRODUCTION

Medications for alcohol use disorder (MAUD), when used in combination with psychosocial treatments, are proven to decrease the frequency and severity of relapse in patients with alcohol use disorder (AUD) (Center for Substance Abuse Treatment, 2009). However, MAUD is vastly underutilized (Ducharme, Knudsen, & Roman, 2006; A. H. Harris et al., 2013; K. M. Harris, DeVries, & Dimidjian, 2004; Mark, Kassed, Vandivort-Warren, Levit, & Kranzler, 2009; Robertson et al., 2018), particularly in mental health settings where 20–50% of patients with serious mental illness (e.g., schizophrenia, schizoaffective disorder, bipolar disorder, severe depression) have co-occurring alcohol use disorder (co-AUD) (Abram, 1989; Abram & Teplin, 1991; Lagerberg et al., 2010). Research on obstacles and facilitators of MAUD and other forms of medications for addiction treatment (MAT) (Wakeman, 2017) has focused on system- and provider-level factors (Finlay et al., 2017; A. H. Harris et al., 2013; Williams et al., 2018); there is a dearth of research examining patient knowledge and perspectives regarding use of medications for AUD. Even less is known about attitudes and preferences of those with severe mental illness (SMI) (Fitzgerald & McCarty, 2009; Mark et al., 2003; Priester et al., 2016; Stöver, 2011).

Data from the National Survey on Drug Use and Health show that 3.3% of U.S. adults experience co-occurring mental health and substance use disorders, but only about half had received any treatment for either disorder in the previous year (Han, Compton, Blanco, & Colpe, 2017). Barriers to receipt of treatment for co-occurring SMI and co-AUD include both patient-level characteristics and structural factors (Priester et al., 2016). Symptoms of SMI including cognitive impairment and amotivation may complicate co-occurring disorder treatment, particular given the key role of motivation in facilitating recovery (DiClemente, Nidecker, & Bellack, 2008; Miller, 2006). A lack of trust of treatment institutions (Johnson et al., 2015), cultural beliefs, and provider stigma (Eliason & Amodia, 2006) can limit access to treatment. Structural barriers to treatment for co-occurring disorders include limited provider training, under-identification of co-occurring disorders, and limited service

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availability. However, individuals who receive both mental health and substance use treatment appear to have more severe mental illnesses as well as criminal justice involvement (Han et al., 2017; Johnson et al., 2015). This suggests that engagement with treatment contexts can increase access to care, and that mental health clinics can play an important role in increasing access to treatment for co-occurring disorders.

Most studies assessing preferences for pharmacotherapy for substance use have focused on patients with opioid use disorder (OUD). These studies show that patient engagement in pharmacotherapy is hindered by lack of knowledge, previous treatment experiences, underestimation of relapse risk, participation in programs that discourage MAT use, and mismatches between patient expectations and program features (Gryczynski et al., 2013; Monico et al., 2015; Ridge, Gossop, Lintzeris, Witton, & Strang, 2009; Yarborough et al., 2016). Although studies of patients leaving opioid withdrawal management programs show that 43–63% desired pharmacotherapy for substance use (Bailey, Herman, & Stein, 2013; Stein, Anderson, & Bailey, 2015), the vast majority of adults who require substance use disorder treatment do not perceive a need for it (Mojtabai & Crum, 2013; Substance Abuse and Mental Health Services Administration, 2013), and pharmacotherapy for alcohol disorders can elicit negative perceptions, particularly the view that medications restrict personal control. (Wallhed Finn, Bakshi, & Andréasson, 2014). In one study, among co-AUD patients who were receiving psychiatric treatment, 35% reported no interest in treatment of any kind for their substance use (Ray, Hart, Chelminski, Young, & Zimmerman, 2011).

Research has shown that patients' attitudes and preferences impact medication adherence and treatment outcomes generally (Budd, Hughes, & Smith, 1996; Bussing et al., 2012; Cabeza, Amador, Lopez, & de Chavez, 2000; Mark et al., 2003; Naber & Karow, 2001; Svedberg, Backenroth-Ohsako, & Lützén, 2003), and patient demand for pharmacotherapy for OUD specifically (Bailey et al., 2013; Yarborough et al., 2016). We could not identify any studies that have explored the views of clients with severe mental illness and co-occurring AUD about taking medications that may help them to reduce their alcohol use. Whalled Finn, Bakshi & Andréasson (2014) explored views regarding treatment in general for AUD but did not include patients with SMI; and while Ray et al. (2011) explored interest in AUD treatment among individuals receiving treatment for SMI, they did not investigate patient attitudes or preferences regarding MAUD. In this study, we sought to explore, among clients of publicly funded mental health clinics, perceived need for, preferences, and attitudes toward taking medications for co-AUD. In addition, we wanted to understand what might motivate clients with serious mental illnesses to find MAUD acceptable. To explore these questions, we conducted focus groups to examine clients' views about AUD and MAUD. We examined their responses by drawing on domains associated with the health belief model (Becker, 1974; Budd et al., 1996; Horne & Weinman, 1999; Janz & Becker, 1984; Liu-Seifert, Osuntokun, Godfrey, & Feldman, 2010), a widely studied rubric for understanding health-promotion decision-making, to identify factors that increase or decrease acceptance of MAUD among individuals with SMI and co-AUD.

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2. Material and methods

2.1. Study setting and context

This study was conducted in 8 of 85 mental health clinics operated by the Los Angeles County Department of Mental Health (DMH). We selected clinics to represent each of the County's 8 service planning areas (SPAs), and to include both large and small and semi-rural and urban sites. DMH provides treatment to more than 250,000 individuals annually throughout the greater Los Angeles area, spanning 4750 square miles. DMH serves an ethnically, racially, and geographically diverse population. Clinics were selected to reflect the diversity of populations and settings seen in Los Angeles County. This study was part of a larger study that assessed organizational readiness and developed a toolkit for implementing pharmacotherapy for people with co-AUD in public mental health settings.

2.2. Participants

We identified and recruited participants at 8 Los Angeles County mental health clinics by: 1) presenting our study at clinic meetings attended by clinic staff and clients and 2) asking supervisors and providers at each of the clinic sites to distribute fliers at substance use disorder / co-occurring disorders (COD) groups being held at the clinic sites. These recruitment procedures have been effective in similar clinics (Bromley, Maratos, & Corteza, 2015; Mikesell, Bromley, Young, Vona, & Zima, 2016).

All focus group participants were being treated for a severe mental illness at the clinics where focus groups took place. We aimed to include individuals identified by clinic staff as having a current or past AUD diagnosis, who experienced problem drinking but who had not been diagnosed with AUD, and individuals interested in discussing strategies to help those who drink too much (e.g., with a family member struggling with alcohol use). We also aimed to enroll participants who varied in their knowledge and perceptions of MAUD by asking staff to invite individuals with an AUD diagnosis whether or not they had experience using MAUDs and by using recruitment materials that did not disclose our goal of discussing medications. We anticipated most participants would have limited knowledge and experience with MAUD due to very low rates of MAUD use in these clinic settings. We invited individuals who identified as having a history of problem drinking because we anticipated that AUDs were underdiagnosed at these clinic sites; excluding participants without an AUD diagnosis would underrepresent those who might be offered MAUD. Given that a substantial portion of individuals with co-occurring SMI and AUD do not express a desire for treatment (Ray et al., 2011), and to foster the inclusion of individuals precontemplative about treatment for AUD who are known to be more difficult to recruit (Anatchkova, Velicer, & Prochaska, 2006; Ruggiero, Webster, Peipert, & Wood, 2003; Velicer et al., 2005) and who may not have received a diagnosis of AUD in these contexts, we invited individuals who had an interest in treatment for AUD, including treatment to help a family member. We believe these recruitment approaches would prove inclusive of individuals receiving treatment for severe mental illness who could benefit from MAUD but who did not yet have extensive knowledge of MAUD, thereby yielding results transferrable to a typical clinical encounter.

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All participants reviewed an information sheet about the focus group and provided oral consent prior to participation. Participants were informed that the purpose of the discussion group was to elicit their ideas about talking to clinicians about drinking and using medications that help with problem drinking. Participants completed a brief, anonymous questionnaire before the focus group that contained questions about demographics, substance use, a brief stages of change scale (Rollnick, Heather, Gold, & Hall, 1992), the AUDIT-C (Bush, Kivlahan, McDonell, Fihn, & Bradley, 1998), and MAUD knowledge and use. Participants received a $30 gift card for participating in the focus group. The RAND Human Subjects Research Committee approved all study procedures.

2.3. Focus group guide

The focus group guide began with a set of introductory questions that elicited participants' level of familiarity with MAUD (e.g., "Do you think you or someone you know has ever taken a medication that helps with alcohol use?"; "Has anyone heard of a medication called Antabuse or disulfiram?"). We reviewed the names of key MAUD options (e.g., oral and long-acting injectable naltrexone, acamprosate, disulfiram) and told the group that these medications could help a person to cut down or stop drinking, sometimes by lessening cravings. We explained that naltrexone is taken as a once-a-month shot or a daily pill, that MAUD are approved as safe and effective, and that they are usually easy to take. We did not provide a full risk/benefit and side effect review for all medications, and were careful not to provide any information that would change participants' perspectives about the medications. When asked specific questions about drug interactions, side effects, or recommendations for use, we provided general responses and encouraged participants to speak to their prescriber.

We based the focus group guide on constructs associated with the health belief model (HBM) (Becker, 1974; Budd et al., 1996; Horne & Weinman, 1999; Janz & Becker, 1984; Liu-Seifert et al., 2010). The HBM is one of the most widely used models for understanding health behaviors, particularly in cases where perception of risk is salient to treatment choices (Noar & Zimmerman, 2005), as is the case with MAUD. The HBM posits that individuals will select treatments based on (a) perceptions that the illness is disabling or serious (severity); (b) perceptions that they are vulnerable to the illness or its consequences (susceptibility); (c) perceptions that its use entails few costs (costs); and (d) belief in the efficacy of the proposed treatment (benefits). The HBM further posits that use of a treatment can be increased by prompts (cues to action) that trigger the health behavior, and that certain environmental conditions may influence uptake of the treatment (contextual factors). Finally, individual's perceptions about their ability to control health outcomes have been shown to strongly shape health behaviors. This individual characteristic is discussed as the domain of self-efficacy (a person's belief in their ability to control a health outcome) or as locus of control (internal, external, or chance), which may function as a moderator or as an equivalent mediator of the other domains of the HBM (Jones et al., 2015; Kudo, Okada, Tsunoda, Satoh, & Aizawa, 2011; Noroozi & Tahmasebi, 2016). Focus groups sought to understand the ways in which each domain might increase or decrease client demand for MAUD by exploring patient perceptions of need for MAUD, preferences for starting MAUD, and attitudes toward MAUD.

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2.4. Qualitative analysis of focus group interviews

We used inductive and deductive techniques in our analysis. We used domains associated with the HBM as a starting point for data analysis. Two coders (EB, MM) independently analyzed a subset of focus group transcripts, using prespecified domains related to the HBM as initial codes while looking for unexpected concepts and ideas. Text segments from 20% of the data were reviewed together to elaborate and confirm code content, discriminate between codes, and clarify code boundaries. The coders resolved discrepancies through consensus, and finalized the codebook containing positive and negative exemplars of each code. Then, one coder (MM) performed focused coding of all transcripts, while another (EB) coded an additional 20% of the transcripts to confirm consistency of coding results. This deductive process of identifying HBM-related domains with the data was followed by an inductive process that identified themes within and across each domain. The two coders summarized, refined, and cross-checked concepts within each domain that described perceived need for, preferences, and attitudes toward MAUD; they further identified concepts that emerged across domains and elaborated their relevance. Final results build on domains associated with the HBM but clarify domain salience in this context and in relationship to one another. Data for all themes were reviewed and discussed by all authors, with three authors (MM, EB, DMT) collaborating to produce final summaries of themes.

3. Results

Eight focus groups were conducted with 87 participants (7 to 15 participants per group; mean n=11). All but 2 participants completed surveys. Participants were 53% female and most were minorities (Table 1). The average age was 47 years (SD=11). We achieved our goal of engaging a group of participants with diverse experiences of alcohol use. In total, almost half (47%) had a current or past diagnosis of a co-AUD. Nineteen of 85 individuals indicated that they had been in treatment for alcohol use in the past. About one-quarter of participants (n=24) reported not currently drinking; 13 of the 24 (54%) had a current or past diagnosis of a co-AUD. About one-quarter reported drinking 4 or more times per week. Of those who were currently drinking (n=58), 26% (n=15) were considering trying to quit, 34% (n=20) were trying to quit, and 22% (n=13) were not considering quitting. Three-quarters had not heard of either long-acting injectable or oral naltrexone; familiarity with other MAUDs was lower. Results for each theme, corresponding to the different constructs of the HBM, are described in the next section and in Table 2.

3.1. HBM

3.1.1 Internal locus of control—One component of the HBM relates to beliefs about an individual's ability to control health outcomes. Qualitative analyses revealed that the most salient and cross-cutting theme was participants' views about the locus of control in alcohol use and recovery. In all 8 focus groups, participants discussed the importance of an individual achieving control over his or drinking through harnessing internal resources such as self-discipline, individual effort and desire, self-control, and willpower. Participants defined the locus of control in recovery as internal to the individual rather than situated externally or related to chance. For example, one participant said that an individual's desire to stop drinking "is definitely the most important thing. You're not going to stop unless you

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want to. If somebody else forced you to stop, you're not going to stop." This participant described overcoming addiction as a matter of self-control: "I quit cold turkey. I was sitting there one day" confronting "conflicting emotions in my mind about quitting and stuff… So it was just totally like learning how to quit enabling yourself that is part of the whole process."

Participants in 7 of 8 focus groups expressed skepticism that a pill could help a person to achieve alcohol abstinence without personal motivation. That is, "I don't care what kind of pill they make, whatever it is. … if you don't deal with the issues that's making you drink… then that's useless, because you have to get down with, 'Why do I feel this way? What's making me feel this way?' A pill ain't going to be able to do that." Similarly, this participant felt that pills "just didn't make sense" because a diagnosis of co-AUD means a person will drink regardless: "I was prescribed it, but I didn't take it. It was like, 'that doesn't make sense to me. I'm going to drink anyways'...[because] at that time I didn't have the desire to stop drinking." Another participant expressed an almost identical view: "They had offered me medication to help me [stop drinking], but I didn't want it … because I didn't want to stop drinking." Another said, "I don't think the pill would work. I think it's on your individual person. Some[thing] traumatizing is going to have to happen to make you want to stop. You can go to all the meetings and take all the medicine you want, you want to drink, you're going to drink. … [S]omething's gotta happen to you to make you be like, 'I can't do it no more.'"

In these ways, participants' views about internal locus of control shaped their perceptions about the potential effectiveness of MAUD. One participant described MAUD as "a barrier" to alcohol abstinence because "the Big Book describes in Alcoholics Anonymous that we don't understand the obsession. … How can you make a pill that stops the obsession?" Another said, "I don't see how you can be expected to be disciplined enough to take a pill every day. … Being an alcoholic is a undisciplined thing, I can't see myself planning to take a pill [every day]. I don't have that much control." This participant said MAUD are meant "to prevent you from drinking. They don't stop you from drinking. If you drink that time, that day, [MAUD] is [*sic*] going to make it difficult for you. … That doesn't make any sense to me. … I'm an alcoholic. I'm not going to fight not drinking. I'm going to drink." Other participants thought that the risk of relapse could increase with MAUD if the client fails to exercise self-control. One client was told that with long-acting injectable naltrexone, "no matter how much you drink, you're not going to feel the buzz, you know, or get drunk or something, like that." The client thought to himself that, "I'm an alcoholic, so that would not even be a deterrent for me. If I'm not going to feel it, I'm just going to keep drinking, drink until I black out."

3.1.2. Severity—The HBM domain of severity refers to how risky, dangerous, or serious an individual considers a health problem. Attitudes and perspectives about the severity of their alcohol use may influence whether individuals believe they need MAUD or other treatments. Focus group participants repeatedly acknowledged the severity of their drinking. Participants described how they kept serious health problems (e.g., liver disease) from family members due to drinking, and the impact of their drinking on their children. One participant described severe tremulousness to the point that "I couldn't hold a beer bottle or

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a mixed drink in my hand. So what I would have to do, I would actually have to put the cup on the table, fill it with hard liquor that would make the shake stop, and … I couldn't hold the cup, that's how bad I was shaking." This participant feared relapse: "I remember those days and I don't want to go back there. I don't want to go back to those DTs [delirium tremens], seeing things and hearing things. … I think about those days that—those weren't fun." Participants also described a severe loss of control. One participant said, "You couldn't tell me to stop." Efforts by his family to try to keep him from drinking were useless: "Why would you tell somebody to stop? It's like talking to a wall, that's how it was to me." Several participants described the severity of alcohol dependence in family members, including one who described a relative who recently "passed away from alcohol abuse. He knew he was going to die, but he was so addicted, he didn't care."

Participants described how their alcohol use worsened the severity of their mental illness and vice versa. One said, "I see things sometimes, when I'm too drunk." Another said, "I've been depressed since I was a teenager. And I drank. … I felt like it used to make me happy or sociable. No, it just turned into a total downer, crying, I mean really, really made my depression much worse." Another said, "My mental health is affected when I drink alcohol. … [My depression] is very, very severe which causes me to drink more." Another said that while alcohol would temporarily suppress auditory hallucinations, "once … I'm not drinking, it comes back worse than it was before." This participant summarized many others' views about the important relationship among self-control, alcohol use, and mental health: "My relationship with alcohol is vital because for me to drink is for me to use drugs, me to come up missing, me to not take care of mental health issues, and that's very important to know for yourself because I can't control alcohol, not one drop of it."

3.1.3. Susceptibility—The HBM domain of susceptibility refers to a participant's perception that he or she is at risk of relapse. Participants perceived themselves to be highly susceptible to relapse. They described alcohol abuse as an enduring, difficult-to-overcome condition. One said, "I relapse all the damn time. I do. This is like the longest I haven't relapsed in I don't know how much time. I have 40-something days. It's the longest I've had not relapsing." Discussions of susceptibility were the only context in which participants externalized the locus of control in alcohol use. Participants described multiple risks for relapse and problem drinking, including genetics ("my grandmother … had 12 kids; all the boys are alcoholics. Two of my uncles died from alcoholism, so I don't know if it's hereditary … but I know I used to drink a hell of a lot.") and life circumstances. One participant said, "I'm homeless. Okay? So basically, yeah, one of the reasons why you see all the … homeless people drinking, is because sometimes it gets cold … and a lot of times alcohol numbs you to the point where you don't even feel the coldness." Another participant described the difficulty of finding other activities to replace alcohol use: "Now that I'm not using and drinking, what the hell am I supposed to do? I don't know how to live life."

Participants also identified societal norms as increasing susceptibility. One described the challenge of seeing advertisements and billboards for alcohol: "It's everywhere; we're inundated with it". Another agreed: "The worst thing that I've experienced … is how socially acceptable it is. And even on the *Today Show* … every single morning they have glasses of wine or a new mixed drink … That is challenging." Finally, participants

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recognized their mental health disorder increased their risk of relapse. For one, a period of alcohol abstinence ended in relapse because "I didn't have mental health treatment." Another described the need for "a dual recovery or harm reduction" approach; and another said, "I became aware of how I had to work the mental health and the drug and alcohol together, that my awareness was what made it successful."

Overall, participants did not explicitly link their views about severity and susceptibility to a demand for MAUD. However, one participant, when commenting on the contexts in which he would find MAUD acceptable, stated that the lethality of alcohol might make him open to taking MAUD: "For me, [the decision to take MAUD] all boils down to how bad do I want to live? … Do I have anything to live for?" Another stated that medication treatment would only be acceptable if he reached a point of complete loss of control over drinking.

3.1.4. Costs as harm or burden—The HBM domain of costs refers to perceived burden or potential harm associated with a treatment. When discussing MAUDs, many participants perceived that MAUD would cause harm, and they most often focused on a perceived risk of dependence. One said, "My thing is I don't want to become dependent on a pill to make me stop or quit or whatever. … [H]ow long do I have to take this? I might not want to take this pill no more, then what? Am I going to relapse?" Other participants identified MAUD as undoing their recovery from addiction. One said, "As long as you be taking that [MAUD], I'm still using drugs because I'm taking something that's a drug and I would feel bad. I'm not getting clean because I'm using this drug." Another agreed, saying, "I don't believe you have to take a drug to get off another drug … (if you) give me another drug as substitute, now I'm hooked on that drug." This participant continued by linking this potential harm of MAUD to the importance of self-control: instead of taking MAUD, this participant felt it was preferable to "just go ahead and quit … remove yourself from old environments. I think that's probably the best way." Two participants in two different focus groups described other negative views of MAUD, such as a general aversion to medication-taking ("I wouldn't take [MAUD] because I don't believe in pills. I really don't want to take the ones I have to take now."). Finally, when asked, some participants asked questions about side effects and financial costs of MAUD, but these issues did not generate discussion within the group.

Participants reinforced one another's views of MAUD harms and burdens. When one participant said, "I don't need any more meds," a second immediately responded, "My psychiatrist is trying to push it on me so hard, that it seems like maybe she's getting a kickback for prescribing it." In another exchange, one client identified concerns that his drinking could become heavier if he used medications, and a second client extended the idea: "I guess I have a reservation … he said it blocks receptors, where you don't feel [the effects of the alcohol]. … I'm afraid if I do decide to drink and I'm taking the medication, I'm not going to feel it" and will drink more. Another added, "Plus, we don't want to be taking all different kind of meds. I'm already on some meds and I'm like they're going to give me this … I'm not willing to do that. It's a little too much for me." In another example of reinforcement, this client described MAUD as "just another form of another addiction you're going to be going through. You're going from one drug to the next." Another quickly added, "I agree with exactly with what she's saying, because I don't remember the pill that

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they were giving me [but] … one pill led me to another pill, and another pill and another pill. … It just did not work for me, until I just had to try to get off of everything." These discussions within the focus groups suggest that many participants had concerns about MAUD (Acocella, 2012).

3.1.5. Benefit—Participants situated potential benefits of MAUD in a narrative about re-gaining self-control over alcohol use. One said, "When I was younger if a doctor had told me about naltrexone, I probably would have tried it. I presume that it's only supposed to be a temporary crutch while you're trying to recover. I definitely would have tried it." Another noted, "If you're going to quit something, you have to start something else. So it's usually a process of, like, weaving out bad habits and replacing them with good ones. So I think that if there's a right kind of medicine for that, that there's a chance it could work." This participant said "The pill, in and of itself, is not a magic bullet. It's just like any of our medications that we might take for mental health. … It comes with therapy and other things, dealing with life. … But it can help you, I think." Other participants indicated concerns about becoming dependent on MAUD, by emphasizing MAUD's limited benefits. As one said, "I think you become codependent to the medication, and then you're just stuck with the medication all your life. So for me, the medication is only to take it, to literally break the habit of drinking, and going to your support group. … Take the medication for a little bit, break yourself down and you build yourself back up, and your medicine comes in and your support groups … then you become stronger." One participant who had used medication to reduce drinking said, "Don't think of it as a thing that … is gonna magically cure you of your alcoholism. It's the foundation to helping you, but it's a tool, but you need to put in the hard work yourself. You need to go to your meetings, you need to go to therapy."

Overall, clients had modest optimism that using medications could reduce alcohol use or prevent relapse. For example, some participants were skeptical that a medication could be effective because it seemed unlikely that it could replicate the benefits of drinking. One said, "If I could get a medication that made me feel good all the time, then I probably wouldn't drink." One participant, hearing other group members' negative assessments of MAUD, disagreed, explaining, "I am currently in treatment right now, and … I guess I'm a little bit more open minded, when it comes to trying that, because I don't want to relapse anymore." Participants who had tried oral or long-acting injectable naltrexone offered the most optimistic assessments of MAUD. One said, "[Vivitrol is effective] because sometimes if I drink some beer, it does not taste … it will stop the taste." Another reported, "My daughter is a DJ so I'm constantly around [drinking] and I feel so good being sober. And I take the naltrexone every day and I don't even want to [drink] when it's sitting right in front of me. And I drank every day, all day, all day."

3.1.6. Cues to action—The HBM posits that prompts can increase the likelihood of a healthy behavior. Participants thought their views on MAUD could change if they knew other clients had benefited or if a trusted provider endorsed the medication. One said, "Seeing a person that, hey, I've been on the pill, I haven't had a drink in five years and now [I'm] about to get off the pill" would motivate him to take MAUD. Another participant said "I had no intention of getting sober when I came here. … But in listening to these people [in

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my group], they give me hope." Another said, "I think if somebody were to say this is a proven thing that'll help you, I guarantee you, I think people would be more willing to do it." Participants also cited that experiences with their mental health medications were important in their decision to initiate treatment. One said, "I didn't think I'd need pharmaceuticals, but did have a lot mental health issues. … I did find the right kind of medicine, and have been doing a lot better since. So that kind of proved me wrong because I didn't think I could rely on pharmaceuticals to help me in my life." Another participant suggested that providers could prompt uptake of treatment: "My doctor recommended me to AA, because she knows I'm having trouble drinking. … And if it isn't for that doctor, I don't think I would have been in one of the programs I'm in now."

3.1.7. Contextual factors—The HBM posits that certain environmental conditions may increase or decrease uptake of a treatment. While participants mentioned that support from both peers and treatment providers might increase their likelihood of quitting drinking, they did not indicate that this support would specifically increase their demand for MAUD. To increase the likelihood of quitting, participants endorsed a co-occurring treatment approach (i.e., both mental health and substance use treated concurrently) and the support of peers. As one said, "Until you've actually been in our shoes, you're never going to really completely fully understand what it's like to be an alcoholic." Two participants in two different focus groups identified stigma as a contextual factor that could decrease MAUD. For instance, one participant said "[People] are very, like, stubborn and hardheaded, yes, they will feel embarrassed taking medication" and continued that in her own family, "We don't ask for help. We never go to any like facility or any doctors, or anything. If we get hurt we don't go nowhere, we just deal with the problem" without medication. Another participant reported that her provider expressed stigmatizing views of those who use drugs or alcohol. As a result, she did not want to discuss her alcohol use or MAUD with her provider.

3.2. An HBM-derived theoretical framework for MAUD demand

Our findings suggest a framework for considering what drives of demand for MAUD among individuals with co-occurring severe mental illness and alcohol use disorder, based on the HBM. Our focus group discussions demonstrate that views about internal locus of control are the most important driver of MAUD demand. As depicted in Figure 1, views about *costs as harm or burden* and views about *benefits* of MAUD influence demand for MAUD via views about *internal locus of control* such that *internal locus of control* mediates the relationship between costs as harm or burden and views about benefits and demand. When MAUD is perceived to facilitate self-control or otherwise reinforce internal locus of control, demand for MAUD goes up. As one participant said in an effort to encourage others to consider MAUD, "Don't think of it as a thing that … is gonna magically cure you of your alcoholism. … It's a tool, but you need to put in the hard work yourself." Where MAUD is perceived to undermine internal locus of control, demand declines. In the words of one participant, "I don't want to become dependent on a pill to make me stop. … I might not want to take this pill no more, then what? Am I going to relapse?" The relationship between views of internal locus of control and both costs as harm or burden and benefits is also reciprocal: the former influences the latter. For instance, several participants said that they believed MAUD would be ineffective and/or harmful (e.g., cause an increase in alcohol

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consumption) when taken by those who do not want to stop drinking; they expressed a belief that MAUD would work best when coupled with a desire for alcohol abstinence. In addition, *contextual factors* and *cues to action* can moderate the degree to which views about internal locus of control drive demand. For example, participants said seeing others succeed with MAUD could increase demand, but experiencing embarrassment due to others' negative views could decrease demand. While perceived *severity* and *susceptibility* may motivate alcohol abstinence overall, they do not drive demand for MAUD directly. They may shape views of costs as harm or burden and benefits, as suggested by the participant who said that MAUDs would be worth considering when alcohol abstinence feels like a matter of life or death.

4. Discussion

This study used focus groups to examine what drives demand for MAUD among clients with SMI receiving public mental health treatment. We found that participants understood that alcohol use has severe consequences, and they perceived themselves to be highly susceptible to these consequences. However, participants' beliefs that an individual must develop and strengthen an internal desire, intention, and/or discipline (an internal locus of control) to stop or cut back on drinking informed their views about potential harms, burdens, and benefits of MAUD. Participants perceived several ways in which use of MAUD could interfere with the development of internal resources for quitting or cutting back. Nonetheless, participants who positioned MAUD as a temporary tool for developing internal readiness and self-discipline expressed the most openness to trying MAUD, and those individuals who had tried MAUD expressed the most optimism about its effectiveness.

Our findings indicate that individuals may perceive using MAUD as interfering with their development of the self-control, which they see as key to limiting and/or stopping their drinking. For instance, some participants described MAUD as allowing an individual to avoid analyzing motivations for drinking or stopping drinking. Some participants viewed MAUD as replacing one drug with another, and some thought MAUD could be habit-forming. Locus of control is important to the philosophy of addiction treatment. Locus of control can be perceived as driven internally (i.e., having control over one's own life) or externally (i.e., being controlled by external forces) (Wallston, Strudler Wallston, & DeVellis, 1978). Studies suggest that those with high internal locus of control can better control their dependence without formal support (Booth Davies, 1992; Strickland, 1978; Walters, 2000), while those with high external locus of control may have more severe alcohol use when exposed to external influences (Gomberg, 1994) and may respond better to group support such as Alcoholics Anonymous (Bridgman & Mcqueen Jr, 1987). Some addiction researchers suggest that individuals with higher external locus of control may respond better to authoritative treatment approaches (Canton et al., 1988). While some of our participants described external factors (e.g., genetics) or contextual cues (e.g., prompts from peers; stigma within family) as driving the severity of their alcohol use, they described these influences as weak relative to internal factors (e.g., "I'm not quite at that point where I'm ready to quit yet"), both in achieving alcohol abstinence and in driving demand for MAUD. Future research could investigate whether those with higher external locus of

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control are more or less motivated to try MAUD than those with higher internal locus of control.

Our findings are important to the development of strategies for increasing demand for MAUD. When participants positioned MAUD as a temporary strategy for building self-control and as one part of a comprehensive treatment plan, they found it more acceptable. In this view, MAUD is a time-limited tool that allows one to bolster and build self-discipline. While acknowledging MAUD's burdens (e.g., adding an additional medication to one's regimen), such a temporary strategy can balance these burdens with benefits, including increasing self-control (e.g., avoiding drinking even in contexts that elicit cravings). Our findings suggest that there is little advantage and a potential disadvantage to over-selling the benefits of MAUD to clients. Instead MAUD may be best portrayed to clients as a time-limited strategy that gives individuals the best chance to translate a desire and readiness to stop drinking into an action. Also, participants indicated that hearing from those who have used MAUD could persuade them to use MAUD. Our participants were very aware of the dangers of alcohol and their risk for relapse, which suggests that emphasizing these issues is not likely to increase demand for MAT. Finally, our findings indicate that MAUD is best presented within the context of comprehensive treatment for co-occurring disorders, given participants' recognition that co-occurring mental health disorders placed them at higher risk for relapse or increased the severity of their alcohol use. Moreover, one participant stated that a positive experience with psychotropic medication gave her a belief that medications could be helpful. Previous studies show that participant knowledge about alcohol treatment is limited to lifelong abstinence, medication treatment with disulfiram, and residential treatment (Wallhed Finn et al., 2014). The majority of our study participants had not heard of any MAUD, including disulfiram, suggesting that a first step toward increasing MAUD demand is to educate patients about the existence of these treatments. For those with prior knowledge or experience with disulfiram, additional education may be required to ensure that patients understand that other MAUDs function differently from disulfiram.

Simultaneously, our findings suggest that conversations about MAUD may differ from those regarding other psychotropic medications. Our results differ from studies of psychotropic medication use among those diagnosed with SMI. Among individuals with SMI, HBM constructs of susceptibility (e.g., re-hospitalization), severity, and benefits (e.g., immediate sense of wellbeing attributable to medications) have been shown to be correlated with medication adherence; Adams and Scott found that perceptions regarding benefits and severity explained 43% of the variance in adherence (Adams & Scott, 2000). If an emphasis on the risks of symptoms and the advantages of medications supports adherence to psychotropic medications, clinical counseling about MAUD may need to address these medications' potential to temporarily support the development of self-control. Emphases on the dangers of drinking seem unlikely to boost demand for MAUD. Studies of other medications show that side effects and long-term safety are a frequently mentioned concern (Julius, Novitsky Jr, & Dubin, 2009; Ostrow, Jessell, Hurd, Darrow, & Cohen, 2017), but while participants raised questions about side effects, this issue did not become a topic of discussion within the focus groups.

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Finally, when delivering counseling about MAUD, clinicians may find that clients' views about MAUD are erroneous or exaggerated. Some of our participants viewed MAUD as interfering with developing self-control, which is inconsistent with the evidence from research. Participants also worried that they would need to take MAUD chronically or would quickly relapse if they missed a dose. Counseling clinicians should directly address the perception that MAUD is addictive or habit-forming. In addition, some participants thought that naltrexone might cause discomfort while drinking or that it would lead to higher alcohol consumption by blunting the effects of drinking. Neither assumption is consistent with studies of naltrexone use. Finally, participants felt strongly that alcohol abstinence required an internal desire to quit, yet studies show that individuals in compulsory treatment achieve alcohol abstinence at rates similar to those in voluntary treatment (Schaub et al., 2010; Werb et al., 2016; Wild, Roberts, & Cooper, 2002).

It is important to note that these inaccurate views of co-AUD and MAUD may not merely dampen client demand for MAUD but may mirror clinicians' attitudes or may undermine their readiness to prescribe it. That is, clinicians with little experience using MAUD may also misperceive its risks or may struggle to counter these views with alternate framings of MAUD and recovery. Future work is needed to explore clinicians' attitudes and beliefs about MAUD, and to investigate how clinicians' views about MAUD shape patients' perspectives. In a study of buprenorphine and methadone, patients' preferences and beliefs about opioid antagonists predicted provider prescribing patterns (Ridge et al., 2009), indicating that client preferences impact provider behavior. Other studies suggest that clear clinician-patient communication and patient engagement in treatment decision-making may increase MAUD uptake and adherence (Yarborough et al., 2016).

Our findings are limited because they reflect the views of individuals from one public mental health system. Additional limitations result from our use of heterogeneous sample focus groups, which allows us to generate hypotheses about perceptions of MAUD among individuals with SMI but does not allow us to verify their true prevalence in this population. While the purposively diverse sampling approach elicited a broad array of views about MAUD, it may not reflect the views of individuals with SMI who are motivated to reduce alcohol use and are considering MAUD. Perspectives of participants with loved ones with AUD may differ from those with AUD. The range of themes discussed during focus groups could have been expanded if we had included this population as well. That our focus group participants had limited experience with MAUD means that our findings may not transfer to individuals considering MAUD in the context of a treatment relationship. Given that less than one-quarter of focus group participants had heard of MAUD, the brief introduction provided at the beginning of the focus group may have been too limited to elicit views of other costs (e.g., side effects, long-term safety, financial cost) and benefits that may be prevalent in this population. Clients provided with a more detailed and client-centered introduction to MAUD (such as would take place at a visit with a prescriber) may develop more optimistic views of its potential benefits. Our finding that participants who had tried MAUD were most optimistic about its benefits supports this idea, but our sample included few participants who had tried MAUD. Finally, because our conversation remained a discussion of MAUD as a medication class, we learned less about views of specific

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medications (e.g., long-acting injectable naltrexone) than we would have using another study design.

5. Conclusion

Individuals receiving treatment for a severe mental illness in public mental health clinics consistently discussed intention, self-discipline, and related internal resources as core to alcohol use disorders. These views shaped perceived need for, preferences for, and attitudes toward MAUD. While participants described alcohol use as a serious problem, this recognition did not motivate them to demand MAUD. Our proposed theoretical framework for MAUD demand (Figure 1) identifies views about internal locus of control as the most important driver of MAUD demand. Framing MAUD as a tool to build self-control over problem drinking appears to be a promising strategy for increasing the acceptability of MAUD among individuals with co-occurring severe mental illness and alcohol use disorder.

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Highlights

- views about locus of control shaped demand for medications for alcohol use disorder
- views about the severity of alcohol use disorder did not shape demand for medications
- medications for alcohol use disorder were perceived to have modest benefits
- medications were not acceptable when seen to undermine self-control over drinking
- acceptability of medications will be higher if framed as resources to build self-control

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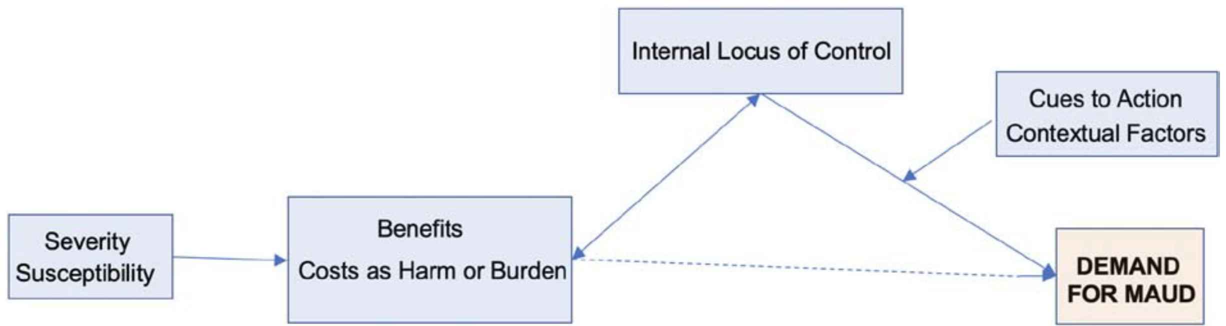

Figure 1 :
A HBM-Derived Theoretical Framework for MAUD Demand

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Table 1.

Focus Group Participant Characteristics, n=85

Characteristic	**n (%)**
Gender	
Male	39 (45.9)
Female	45 (52.9)
Do not identify as female, male or transgender	1 (1.2)
Age	47.2 (11.0) *
Race	
African American	28 (32.9)
White	26 (30.6)
American Indian, Alaskan Native, or Asian	2 (2.4)
More than 1 race	6 (7.1)
Unknown	2 (2.4)
Hispanic/Latino ethnicity	34 (40.0)
Diagnosis **	
Schizophrenia and/or Schizoaffective Disorder ***	21 (24.7)
Bipolar Disorder	21 (24.7)
PTSD	31 (36.5)
Other Anxiety Disorder	36 (42.4)
Major Depressive Disorder	48 (56.5)
Other Psychiatric Disorder	16 (18.8)
Co-AUD Diagnosis	40 (47.1)
Current Alcohol Use	
Not Reported	3 (3.5)
Currently Drinking	58 (68.2)
Not Currently Drinking	24 (28.2)
Not Currently Drinking, with co-AUD	13 (15.3)
Not Currently Drinking, without co-AUD	11 (12.9)
Drinking 4 or More Times per Week	22 (25.8)
Drinking 6 or More Drinks Daily or Almost Daily	12 (14.1)
Drinking, Trying to Quit	20 (23.5)
Drinking, Planning to Quit in Next Month	4 (4.7)
Drinking, Considering Trying to Quit	15 (17.6)
Drinking, Don't Plan to Quit	13 (15.3)

Characteristic	n (%)
Current Drug Use	
Currently Using Other Recreational Drugs	8 (9.4)
Currently Using Other Recreational Drugs to Get High	4 (5.9)
Familiarity with MAUD	
Never Heard of Long-Acting Injectable Naltrexone	64 (75.3)
Have Taken or am Taking Long-Acting Injectable Naltrexone	1 (1.2)
Never Heard of Oral Naltrexone	62 (72.9)
Have Taken or am Taking Oral Naltrexone	3 (3.5)
Never Heard of Disulfiram	63 (74.1)
Have Taken or am Taking Disulfiram	0(0)

[*] Mean (standard deviation)

[**] Median number of psychiatric diagnoses in these categories per participant=2

[***] One individual endorsed both diagnoses

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Table 2.

Sample Focus Group Questions and Quotes as Mapped to Themes Identified in Data

Theme*	Potential Dimensions	Sample Questions	Sample Quotes
Internal Locus of Control	• Role of Effort in Preventing Relapse • Role of Self/Others in Preventing Relapse	• What ups the chance you stay clean? • Does it seem possible that a medication could help prevent a relapse to drinking? How and in what situations?	"I don't think the pill would work. I think it's on your individual person. Some[thing] traumatizing is going to have to happen to make you want to stop. You can go to all the meetings and take all the medicine you want; you want to drink, you're going to drink."
Severity	• Importance of Relapse to Wellness • Negative Consequences of Relapse	• In what ways do mental illness symptoms like hearing voices or feeling sad impact a person's control over drinking? • Who or what convinced you that relapses are serious?	"My mental health is affected when I drink alcohol. [My depression] is very, very severe which causes me to drink more. I isolate. I become angry at the world and everybody, and I think it makes it more intense — intensifies my mental health issues."
Susceptibility	• Perceptions of Risk of Relapse • Likelihood of Avoiding Relapse	• Do you think of yourself or those you know as 'at risk' for relapse? • Once someone has gotten sober, is it difficult to avoid relapse? Why or why not?	"I relapse all the damn time. I do." "The only damn thing I knew how to do was get drunk."
Costs as Harm or Burden	• Anticipated Side Effects • Complexity of Dosing Regimen • Perceived Barriers to Use	• Why wouldn't you or someone you know take a medication to avoid relapse or to drink less? Let's list all of the reasons. • Do you worry that a medication like this might make other mental health issues worse? Why and why not?	"I don't want to become dependent on a pill to make me stop or quit." "I don't need any more meds."
Benefits	• Importance of MAUD or abstinence to wellness • Anticipated MAUD Effectiveness • Ways to Perceive Medication Benefits	• If this medication doubled the chance that a person could stay sober, would you take it? Tell me about that. • Why would you or someone you know take a medication to avoid relapse or to drink less? Let's list all of the reasons.	"I want to be open minded, because see, I've heard some good things about that, about the shot." "I've been drinking so many years, when there's a stressful situation, I automatically pick up, even though the Vivitrol, it does help me."
Cues to Action	• Actions of Significant Others • Relationships with Providers	• What might increase your motivation to take a medication like this?	"I think if somebody were to say this is a proven thing…I think people would be more willing to do it."
Contextual Factors	• Stigma Concerns • Social Support for Adherence	• Tell me about times it might be embarrassing to take a medication like this. • Besides taking a medication, what ups the chance a person stays sober?	"I found support outside of the clinic that's helped me." "…yes, [my family members] will feel embarrassed taking medication"

*Constructs associated with HBM were utilized to design focus group guides; constructs were then refined into themes through analysis of focus group data