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Implementation Barriers and Facilitators of Evidence-Based Practice in Substance Use
Treatment: Exploring the Research to Practice Gap

A dissertation submitted in partial satisfaction of the requirement for the degree Doctor
in Philosophy

in

Interdisciplinary Research on Substance Use

by

Melanie Jane Nicholls

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2022

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University of California San Diego

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2022

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ABSTRACT OF THE DISSERTATION

Implementation Barriers and Facilitators of Evidence-Based Practice in Substance Use
Treatment: Exploring the Research to Practice Gap

by

Melanie J. Nicholls

Doctor of Philosophy in Interdisciplinary Research on Substance Use

University of California San Diego, 2022

San Diego State University, 2022

Professor Lianne Urada, Chair

Background: The substance use treatment field needs to keep up with evidence-based practice (EBP) implementation. Guided by the EPIS Framework, an implementation science framework looking at factors that influence the implementation of EBP, this dissertation sought

to illuminate the implementation factors that may be barriers or facilitators when implementing EBP.

Methods: Chapter 2 consists of a cross-sectional anonymous web survey with substance use treatment providers in California (N=101) and used bivariate regression models and a hierarchical regression model to examine how different attitude domains were associated with substance use disorder treatment (SUDT) providers' frequency of use of EBP. Chapter 3, using a qualitative approach and situational analysis, explored the implementation factors that relate to implementing MOUD into practice by interviewing SUDT providers in San Diego County (N=21). Chapter 4 utilized the 2019 National Survey of Substance Abuse Treatment Services (N-SSATS), concentrated on only California substance use facilities, and utilized chi-square analyses and multiple logistic regressions to assess the implementation factors related to offering MOUD.

Results: In Chapter 2, at the bivariate level, the attitude domains of openness, organizational support, requirements, feedback, and appeal were all associated with more use of EBPs, while negative perceptions of monitoring were associated with less use of EBP. Overall, the attitude domain of the appeal was statistically associated with more use of EBP in the hierarchical linear regression. Chapter 3 found that the themes affecting implementing MOUD included funding, training, service and inter-organizational environments, and organization characteristics. Chapter 4 findings elucidated that less than half (47.4%) of treatment facilities in California offer MOUD. Results demonstrated that private for-profit and accredited facilities were more likely to accept private insurance and less likely to accept Medicaid and other government insurance. Government-owned facilities and facilities that received government

funding had lower odds of offering MOUD. Facilities that were accredited, accepted private health insurance, and accepted IHS/Tribal/Urban funds were more likely to offer MOUD.

Conclusion: These findings illustrate the need to use implementation science techniques when implementing EBP in the SUDT field. EBP for substance use are continually underutilized. This dissertation's results show that increasing the appeal of EBP, providing more education and training, and having accreditation and accepting private insurance can help bolster the implementation of EBPs. Future directions could look at how to increase attitudes toward EBP in providers and decrease the barriers of funding for MOUD.

CHAPTER 1: INTRODUCTION

OVERVIEW

In 2020, about 40.3 million people 12 and older had a substance use disorder (SUD), as defined by the DSM-5 criteria, in the United States.¹ The National Institute of Drug Abuse (NIDA) defines addiction as “a chronic, relapsing disorder characterized by compulsive drug seeking, continued use despite harmful consequences, and long-lasting changes in the brain. It is considered both a complex brain disorder and a mental illness. Addiction is the most severe form of a full spectrum of substance use disorders, and is a medical illness caused by repeated misuse of a substance or substances.”² It is important to point out that those who do seek addiction treatment are instead diagnosed with a substance use disorder and addiction is not a diagnosis. Addiction is pervasive, multifaceted, affects multiple areas of one’s life, and cannot be characterized as only a physical or mental health issue. Substance use disorders span physical, mental, and social health and require a multidisciplinary approach when it comes to treatment. A multidisciplinary approach consists of treating the physical symptoms of substance use, physical health, mental health, relationships, nutrition, and other areas of a person’s life that may have been affected by substance use. For such a pervasive disorder, up-to-date, evidence-based practices are necessary and the golden standard of care.

Evidence-based practice (EBP) is using the best available evidence that has been proven successful by being studied and tested in academic or clinical settings and replicated more than once.^{3,4} The Institute of Medicine has also defined EBP as integrating the research that holds the best evidence, the clinician's expertise, and a patient's values.^{5,6} There has been a lack of agreement in SUDT regarding identifying practices that can be labeled as evidence-based.⁷ A plethora of behavioral mental health EBPs are used in the substance use disorder treatment

(SUDT) field, covering areas such as contingency management, motivational interviewing techniques, cognitive behavioral therapy and coping skills, and couples/family counseling techniques.^{7,8} Pharmacotherapies are also EBP that have been used in SUDT.⁸ On average, it takes an EBP 17 years to be implemented into general healthcare practice, with only half of all EBP reaching widespread clinical use.⁹ SUDT settings and facilities feel increasing pressure to implement EBPs to receive government funding and promote quality of care; however, there is still a lag in implementing EBP into practice, often referred to as the research-to-practice gap.¹⁰

In a proposal for a systematic review on the implementation of EBPs for alcohol and substance use disorders, it was pointed out that about 30-40% of patients do not receive evidence-based treatment.¹¹ Even more alarming was that about 25% of patients receiving evidence-based treatments receive inappropriate or harmful ones.¹¹ EBPs are still not widely practiced in SUDT today, with treatment being more focused on modalities that have anecdotal support or that have not been proven to be successful in the SUDT setting.¹² It is estimated that only 25% of community-based services provide EBP, such as addiction medications, which will be referred to as medically-assisted treatment (MAT), psychosocial therapies, such as motivational interviewing or cognitive behavioral therapy, or integrated services.¹¹ Although many effective treatments exist for SUDT, they are not widely practiced and are underutilized.

There is widespread frustration with research and treatment developers and providers regarding the uptake of EBPs for substance use treatment.¹³ The barriers to implementing EBPs can range from attitudes toward EBPs, lack of resources and training, and financial disincentives.⁸ At the provider level, attitudes toward EBP are related to their intended use of EBP, with lower attitudes related to less uptake of interventions.¹⁴ It has also been noted that clinicians tend to gravitate more toward treatments based on folk wisdom accumulated by peers

and personal experience rather than EBP.¹⁵ At the organizational level, some barriers have been clinicians lacking training in psychosocial therapies; when they are trained, the necessary supervision and fidelity monitoring is not followed up with.⁸ At the system level, barriers to implementing EBP, such as MAT, include that they are often heavily regulated due to the perceived risk of medication diversion and are usually not covered by insurance plans.⁸ Overall, Clinicians and treatment facilities use practices with little to no evidence of effectiveness, are barely trained in EBP, and rarely use them.¹⁵

The studies on EBP in substance use have focused on how efficacious treatments are and the recipients of such treatments. To better the uptake and success of EBP in practice, an implementation science focus can be taken and include providers, organizations, and systems in the larger context that help deliver and implement such treatments.⁸ Moreover, many studies that look into implementing or using EBPs in substance use focus on publicly funded or community-based organizations, which may be more inclined to use EBPs than privately owned facilities.^{10,15} Therefore, this dissertation sought to understand what barriers and facilitators exist when implementing EBP in SUDT by looking at the provider, organization, and system levels of implementation.

BACKGROUND

Implementation Science

Table 1.1 Implementation Science Terms and Definitions	
Term	Definition
Implementation Science	“The scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices into routine practice, and, hence, to improve the quality and effectiveness of health services” ^{9,16}
Implementation	“Use of strategies to introduce or change evidence-based health interventions within specific settings to improve population health” ¹⁷
Evidence-Based Interventions/Practices	“Interventions that have undergone sufficient scientific evaluation to be considered effective” ¹⁷

This dissertation was guided by implementation science and the Exploration, Preparation, Implementation, Sustainment (EPIS) Framework; see the conceptual framework section for more details. Implementation science can be defined as the “scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices into routine practice and to improve the quality and effectiveness of health services.”^{9,16} The definitions of implementation science, implementation, and EBP can be seen in Table 1.1. The SUDT field is a prime example of the research-to-practice gap and is underrepresented in implementation science.^{8,11} Implementation science is heavily influenced by several disciplines, such as public health, psychology, and organizational theory, and is a growing field in health services research.¹⁸ Implementation science can be incorporated at any level of research, whether in testing a new EBP or intervention for effectiveness and designing the EBP for future implementation and dissemination.¹⁸ Implementation research can also come after an EBP is efficacious, thus looking at the future implementation strategies to use and understanding the context in which the EBP was effective.¹⁸

Most implementation studies focus on the acceptance of EBP, an organization's capacity to implement an EBP, and rates and the quality of the use of EBP rather than their effects or effectiveness.⁹ Implementation science seeks to accumulate knowledge, frameworks, and evidence-based implementation strategies to best ensure that EBP are being delivered to the correct patients and with fidelity and to lessen the research-to-practice gap.^{11,19} Implementation science is the best-fit approach to achieve the aims of this dissertation, which are to gain knowledge on the barriers and facilitators of the use of EBP in SUDT to discern where implementation strategies are needed in future implementation studies in this setting.

Barriers and Facilitators of Using EBPs

One of the primary goals of implementation science for health is to “identify the factors, processes, and methods that can successfully embed EBPs in policy and practice to achieve population health.”¹⁷ There are many reasons for the barriers to adopting EBP into practice, such as the characteristics of the intervention, cost, time demands, and it not being customizable; the research design used to test the EBP, such as the participants or setting not representing the actual target population or setting and not evaluating the implementation of the EBP; the situation of the targeted setting, such as where it is being implemented and the capacity the organization has to do so; misalignment between research evidence and organizational priorities; the interaction between all of these factors.^{9,17,20} EBP has also had many critics that express concern about the excessive emphasis on scientific evidence, which they feel has encouraged a rigid application of evidence rather than leaving room for skilled interpretations and adaptations that are clinically appropriate for clients.¹⁰

Barriers and facilitators to using EBPs have been found at the provider level. Providers with higher job positions, such as management and clinical supervisors, and those with graduate

degrees, are more likely to support EBP and have favorable attitudes toward them.²¹⁻²⁴ However, in one study that compared program directors' and staff members' perceptions of different substance use treatment EBP, it was found that education level was not related to the use of most of the EBP.²⁵ Some researchers suggest that education level may not be as important as training and resources provided to staff regarding using EBPs.²⁵ In addition, staff attitudes toward EBP and training have been essential links in understanding the difficulties in their implementation. When delving deeper into these challenges, we find that negative attitudes or beliefs toward EBP from staff, inadequate training, and inadequate quality and fidelity monitoring all contribute to the lack of implementation of EBP in substance use treatment.²¹ Attitudes in providers have been studied in many different settings concerning their use of EBP and are an important implementation factor when it comes to the uptake of new interventions into practice.

In their study using EBPAS-36 with mental health workers, Rye and colleagues found that nurses reported more positive attitudes toward EBP than psychologists, and clinicians had more of a negative view of EBPs than non-clinicians.²⁶ Men were more likely to have negative attitudes toward EBP than women, and younger respondents had more favorable attitudes. Rye and colleagues suggest this may be due to younger providers wanting to focus on gaining knowledge and skills to help them perform their tasks, making training and organizational support more favorable for them than older providers.²⁶ Providers who worked in private settings held more negative attitudes toward EBP and had more professional concerns about them when compared to providers who worked in public outpatient facilities.²⁶

Greater perceived effectiveness and more training resources are related to greater use of psychosocial EBPs.²⁵ The Practice and Research Collaborative (PARC) study was conducted in 2004 in Californian community-based programs to assess treatment providers' perspectives on

the effectiveness of certain EBP and how training may impact their use.²⁵ The EBPs surveyed included Motivational Enhancement Therapy, Supportive Expressive Psychotherapy, Community Reinforcement Approach, Matrix model, Voucher-based reinforcement therapy, and empirically supported pharmacological interventions such as methadone, buprenorphine, disulfiram, and naltrexone. There was no significant difference between staff and supervisors in their perceived effectiveness of psychosocial interventions.²⁵ Education level of the staff they surveyed was not associated with the use of the treatment studies. About 35% of the participants had a bachelor's or higher, suggesting that education level may not be as crucial of a predictor or factor when it comes to EBP use for non-degree treatment providers.²⁵

Additionally, the PARC study also found that while most of the psychosocial interventions were used in more than half of the programs, only about a third of the programs used any of the pharmacotherapies listed.²⁵ This tends to be a common trend where psychosocial and cognitive-behavioral interventions are more likely to be implemented in substance use treatment facilities, and the use and implementation of pharmacotherapies fall behind. The use of psychosocial and pharmacologic interventions was associated with the participants' abilities to obtain information from outside their organization, such as journals, other facilities, and county, state, and research entities.²⁵ Many staff and directors did not know the effectiveness of several pharmacological treatments, especially buprenorphine and naltrexone. This is alarming as providers may not recommend or refer clients to treatment, such as medications for opioid use disorders (MOUD), if they do not know their effectiveness. Although many of the EBPs were seen as effective, many of the approaches were not routinely used in practice in these community-based programs in California, especially regarding pharmacotherapies.

Medication-Assisted Treatment for Substance Use Disorders

One of the most effective evidence-based practices for some substance use disorders has been MAT. MAT consists of a combination of medications and counseling with behavioral therapies and has been found to help reduce use, prevent overdose, and treat certain substance use disorders.²⁷ This dissertation focuses on MAT for opioid use disorder, which will be referred to as MOUD, due to it being one of the most effective treatment options for treating opioid use disorders (OUD), yet is still being underutilized in SUDT.^{28,29}

MOUD has been approved by the Food and Drug Administration (FDA) and has been included as a guideline for practice by the American Society of Addiction Medicine (ASAM).²⁸ The World Health Organization also recognizes MOUD as an International Standard for the Treatment of Drug Use Disorders.²⁹ MOUD options consist of Buprenorphine, Naloxone, Buprenorphine plus Naloxone, Methadone, and Naltrexone.^{28,30} Although MOUD has the backing of national and international entities, they continue to be underutilized and are not widely available in treatment settings.^{13,31,32} Past research has found that only about 23% of publicly funded SUDT facilities offered MOUD, and less than half of privately owned SUDT facilities had physicians that prescribed the medications.^{33,34} In addition, providers' adoption of MOUD especially has not kept up with the progression of the opioid epidemic.^{11,29}

The main barriers in research regarding MOUD are stigma, experiences with treatment, logistical issues, and knowledge of treatment options.³⁵ When it comes to providers, reasons for not prescribing MOUD usually consist of stigma related to the medications, needing to get waived to provide MOUD, not believing in the effectiveness of the medications, lack of time, insufficient reimbursement, not wanting to work with “difficult” patients, and overall lack of

willingness to prescribe it.^{11,29,35} For substance use counselors, a lack of knowledge of the effectiveness of medications was a significant barrier in recommending the option to clients.³⁶

MOUD are scheduled narcotics and there is more federal regulatory oversight when prescribing medications such as buprenorphine, a schedule III narcotic, with providers needing to receive an X-waiver from the Drug Addiction Treatment Act of 2000 (DATA 2000).^{27,29,31} In April 2021, the Health and Human Services (HHS) moved to exempt physicians from needing the X-waiver if they are treating less than 30 patients to increase the availability of prescribers; this does not include hospital-based physicians.³⁷ Methadone is a schedule II narcotic and can only be dispensed at a licensed Opioid Treatment Program (OTP).²⁷ Past literature has shown that there is an increase in MOUD, except for methadone.²⁷

Much research has also been done on the barriers to receiving MOUD from the perspective of people with substance use disorders. Less than half of patients receive any MOUD, and this can be due to personal stigma toward it, such as beliefs of one not being sober or in recovery if needing such medications; experience with providers, such as being treated poorly; lack of insurance or income to afford such medications; and lack of knowledge of the options or how the medication works.^{35,38} Patients' perspectives on the barriers and facilitators of receiving MOUD are out of the scope of this dissertation.

There has been plenty of research on the barriers and facilitators of prescribing and recommending MOUD, along with patients receiving or choosing to be on them. This dissertation took an implementation approach to understand what may facilitate the implementation of MOUD, such as provider and organization characteristics, along with systematic traits, to see what factors could be targeted for future implementation interventions. As previously mentioned, MOUD works best as an interdisciplinary approach with clients

receiving both medication and behavioral therapies; therefore, having the perspectives of both medical providers and behavioral health providers will provide insight into implementation factors of MOUD, along with future EBP.

Substance Use Treatment in California-Study Setting

California is a hotspot for alcohol and drug treatment in the United States. Southern California is known as the “Rehab Riviera,” home to over 1,100 rehabilitation and treatment facilities in just four counties.³⁹ A newspaper in Orange County conducted an investigative series and found that many of these facilities were responsible for systemic fraud, addiction exploitation, and not following evidence-based standards.³⁹ California presents an opportunity for exploring the implementation of EBPs due to its extensive substance use treatment network and its history of lacking in the use of EBPs.

In 2018, Bill SB 823 was passed in California, stating that alcohol and drug abuse treatment and treatment facilities must meet specific requirements to be licensed.⁴⁰ Many publicly funded programs and Drug Medi-Cal providers are required to follow ASAM criteria, and SB 823 is nudging the rest of the treatment centers in California in that direction. To be licensed, publicly and privately funded facilities in California must adopt the American Society of Addiction Medicine (ASAM) treatment criteria or equivalent evidence-based standards and maintain such standards. Additionally, Bill SB 823 has made evidence-based standards and treatment mandatory in California by January 1, 2023.⁴⁰ SB 823 was introduced to ensure that clients, families, and insurers accessing such treatment and paying for it receive the quality and evidence-based care they need.³⁹ California will join over 30 states in requiring ASAM or other evidence-based criteria for licensure.³⁹ The passage of this bill is one step closer to having evidenced-based treatment and ethical care in the addiction field, especially in California, where

many treatment centers did not use such guidelines and instead used anecdotal treatment options that held no efficacy.³⁹ If EBP are to be required by law, then it is essential to understand the barriers and facilitators of the implementation of EBPs. This dissertation sought to explore and understand barriers and facilitators that may arise when implementing EBPs in California, especially in Southern California, where SUDT is heavily located.

CONCEPTUAL FRAMEWORK

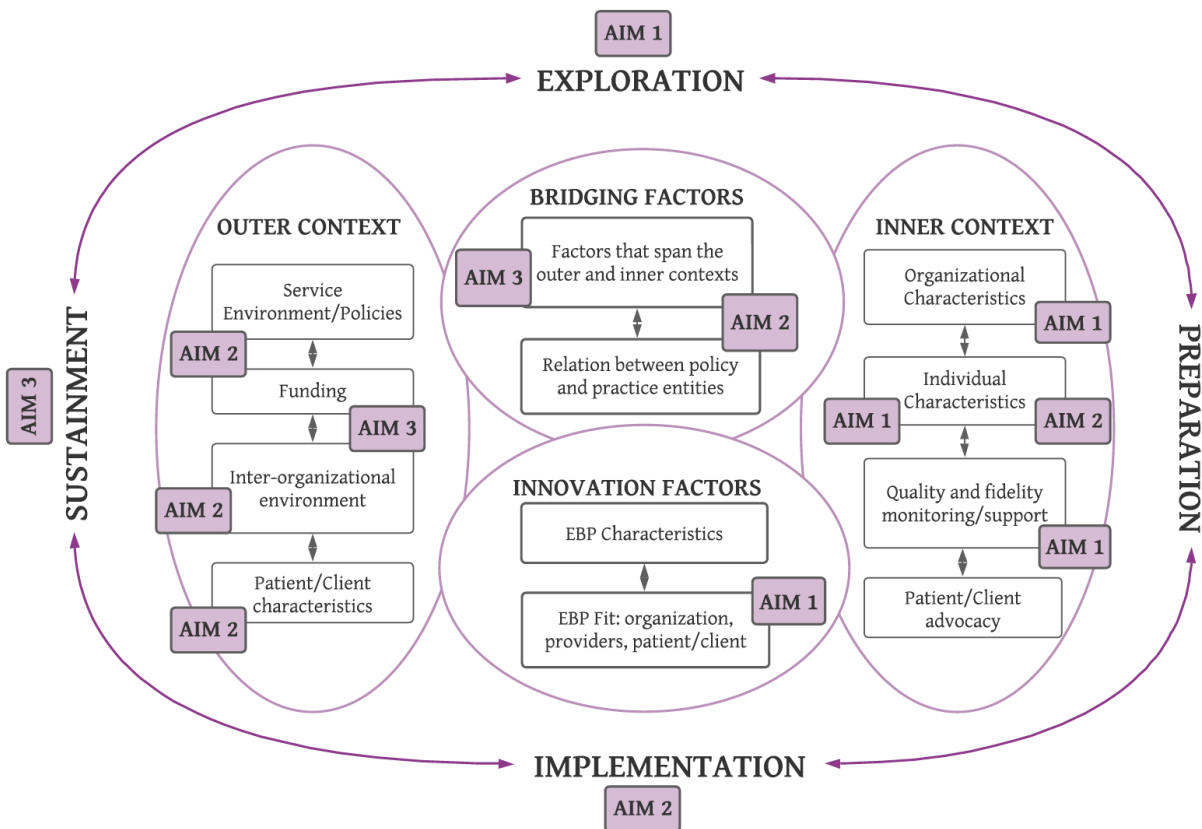


Figure 1.1: The Adapted Exploration, Preparation, Implementation, Sustainment (EPIS) Framework.^{10,41}

This dissertation took an implementation science approach and used an implementation science framework, the Exploration, Preparation, Implementation, Sustainment (EPIS) Framework, to guide the research questions, designs, and analyses. First, a general overview of EPIS will be discussed, followed by how EPIS is being applied to the aims of the dissertation,

which will be presented last. EPIS is widely used in public sector services and allied health service systems.^{10,41} Figure 1.1 is an adapted figure for this dissertation.^{10,41} EPIS was created from literature based on mental health, substance use disorder treatment, and child welfare and is a conceptual model of factors that influence the implementation of EBPs in publicly funded settings.⁴¹ EPIS is a process model, which means it guides the process of implementation research and how to translate it into practice. In EPIS, the implementation process is described by four phases and four constructs that exist within and across multiple levels.

EPIS comprises four phases (exploration, preparation, implementation, and sustainment) and four constructs (outer context, inner context, bridging factors, and innovation factors) to define the implementation process in a dynamic way.^{10,41,42} Each of the constructs can be assessed at all four phases. This dissertation addressed three of the four phases, which were exploration, implementation, and sustainment. EPIS has been used extensively in the public service field as a framework for developing strategies for implementation and evaluation. This study will use EPIS to understand the challenges, barriers, and facilitators of implementing EBP in SUDT, which has been done before, but in conflict-affected populations.⁴³

A systematic review of the research application of EPIS found 49 unique research projects.¹⁰ However, only eight reported on the specific health focus being studied, and the review lumped mental health and substance use together, making it unclear how many projects, if any, solely focused on substance use.¹⁰ Additionally, in past research, when used in SUDT, EPIS was used to improve leadership and organizational implementation climate.²⁸ This dissertation adds to the implementation science literature, explicitly using the EPIS Framework, by providing further insight into the barriers and facilitators of implementing EBP in the SUDT field at the provider, organizational, and systemic levels.

EPIS Phases

The exploration phase consists of the organization, research groups, or stakeholders looking at the needs of the people they serve and working to identify which EBPs would best meet those needs, along with assessing different level factors (system, organization, provider) that can explain potential barriers and facilitators for implementation.^{10,41-44} The exploration phase begins when a public health need arises, and providers think of ways to address it and is the first step in the EPIS process. Chapter 2 (Aim 1) addresses the exploration phase as it explores the different attitude domains in providers and how they are associated with using EBP. A specific EBP was not chosen for this exploratory phase and instead focused on assessing the factors that may be potential barriers or facilitators toward providers using EBP, which impacts implementation.

The phases of EPIS inform the implementation process and build off each other. Therefore, after the exploration phase and exploring what EBP to use to address the public need, we would move to the preparation phase. The preparation phase occurs next when an EBP has been chosen, and providers begin to identify any barriers or facilitators of implementation, consider any adaptations that may need to be made to the EBP, and develop an implementation plan that considers these factors.^{10,41-44} In the preparation phase, it is essential to incorporate implementation supports, which consist of adequate training, auditing, and feedback on how the EBP is being used and create an implementation climate that supports the EBP. This dissertation did not address the preparation phase as it was out of the scope of this study to plan for the implementation of an EBP.

The implementation phase follows the preparation phase and is when the EBP is implemented within the organization, the providers see if they are adequately prepared for the

use of the EBP, and there is active facilitation of the adoption of the EBP.^{10,41-44} During this phase, the implementation of an EBP should be monitored, and any adaptations or adjustments that need to be made should be addressed. Additionally, this phase is essential to assess support and receptiveness for the EBP. Chapter 3 (Aim 2) considers the implementation phase as it explores providers' perceptions of the barriers and facilitators of getting clients onto MOUD. MOUD has already been implemented in the organizations where the providers in Chapter 3 work. Chapter 3 seeks to understand the perceptions of the barriers/facilitators of implementing MOUD and the problem-solving and adaptations they utilize to help implement MOUD.

The sustainment phase is the last stage of the implementation process. It focuses on the maintenance of the newly adopted EBP by looking at the support used to ensure that the EBP is continuing to be delivered, with or without adaptations where needed, continuing to be practiced with fidelity, and has stable funding.^{10,41-44} Chapter 4 (Aim 3) focuses on the sustainment phase as it looks at what factors contribute to SUDT facilities delivering MOUD to their patients.

Key Constructs

The Outer and Inner Contexts

During each phase of EPIS, the outer system context and the inner organizational context are considered. The outer context consists of the external environment in relation to the organization, such as the service and policy environment, people receiving the EBP, and the inter-organizational relationships between the organization, such as with governments, funders, or managed care organizations.^{10,41-43} This includes an organization's relationship with insurance funding, grant funding, and other funding streams that may exist to help use EBP. Chapter 3 (Aim 2) addresses the outer context by looking at how policies, funding, the inter-organizational environment of SUDT, and patient characteristics can influence the implementation and uptake

of MOUD. Chapter 4 (Aim 3) focuses on the outer context in relation to the organizations' connectedness to funding and how it impacts SUDT facilities offering MOUD to patients.

The inner context focuses on the characteristics within an organization, such as leadership, resources, practices, and characteristics of individual adopters.^{10,41-43} Chapter 2 (Aim 1) focuses on the inner context by exploring providers' characteristics such as education level, race, gender, and age, along with how attitude domains can exist as individual characteristics, organizational characteristics, innovation factors, and how these are related to the use of EBPs by providers. Chapter 3 (Aim 2) explores the inner contexts of organizational and individual characteristics and how they may be barriers or facilitators in implementing MOUD. The inner and outer contexts have a dynamic relationship when implementing EBPs into public health practice.

Innovation Factors

Another critical component of EPIS is the innovation factors related to the EBP, such as the fit, which can interact with the inner context (provider and organization) and outer context (patient/client), along with the characteristics of the actual EBP.⁴¹⁻⁴³ Innovation factors are also assessed at each phase. Chapter 2 (Aim 1) addressed innovation factors by looking at how providers' attitudes related to innovation factors may influence their practice of EBP, such as if they perceive EBP as having limitations, fitting well with their values and needs of clients, perceiving EBPs as not clinically useful, and the appeal of an EBP.²³

Bridging Factors

The final key component of EPIS is the bridging factors that consider the interconnectedness of the outer and inner contexts and how these influence the implementation process. Examples of bridging elements are lobbyists impacting legislation, community-academic partnerships, accreditation, and the influence of local policies on certification or licensing.^{10,41-43} Bridging factors were incorporated into the inner and outer contexts in Chapter 3 (Aim 2) and how the two are interconnected when it comes to implementing MOUD. For example, policies are part of the outer context that also affects providers at the inner context level. Chapter 4 also assesses bridging factors by looking at the organization that operates the SUDT facility (private for-profit, private non-profit, government-owned) and if the facility is accredited. Accreditation is given by a regulatory authority and helps ensure quality control, consistency, and reliability of services.⁴⁵ There have been mixed results on if being a private facility and having accreditation have been associated with the adoption of buprenorphine in SUDT, and this dissertation will seek to provide more clarity on these bridging factors and their relation to MOUD.⁴⁶⁻⁴⁸

AIMS AND HYPOTHESES

This dissertation is guided by an implementation science framework to better understand the lag in implementing EBP in the substance use field. It is pertinent to understand the facilitators and barriers to implementing and sustaining EBPs in substance use treatment to meet the needs of people with a substance use disorder. To understand these facilitators and barriers to implementing EBP in substance use treatment, this dissertation has the following aims:

Aim 1 (Chapter 2): Attends to the Exploration Phase of the EPIS Framework by exploring how attitude domains that span the inner context elements (individual characteristics, organizational characteristics, quality and fidelity monitoring), and innovation factors construct are associated

with the frequency of use of EBPs in California-based substance use treatment providers' (N=101) by employing an online survey using the Evidence-Based Practice Attitude Scale (EBPAS-36) and the Evidenced-Based Practice Questionnaire (EBPQ).^{49,50}

H1: Individual characteristics, such as scoring high in openness, will be associated with a higher frequency of use of EBP.

H2: Organizational characteristics, such as having more organizational support, will be associated with a higher frequency of use of EBP.

H3: Quality and fidelity monitoring, such as feedback, will be associated with a higher frequency of use of EBP.

H4: Innovation factors, such as the appeal of EBP, will be associated with a higher frequency of use of EBP.

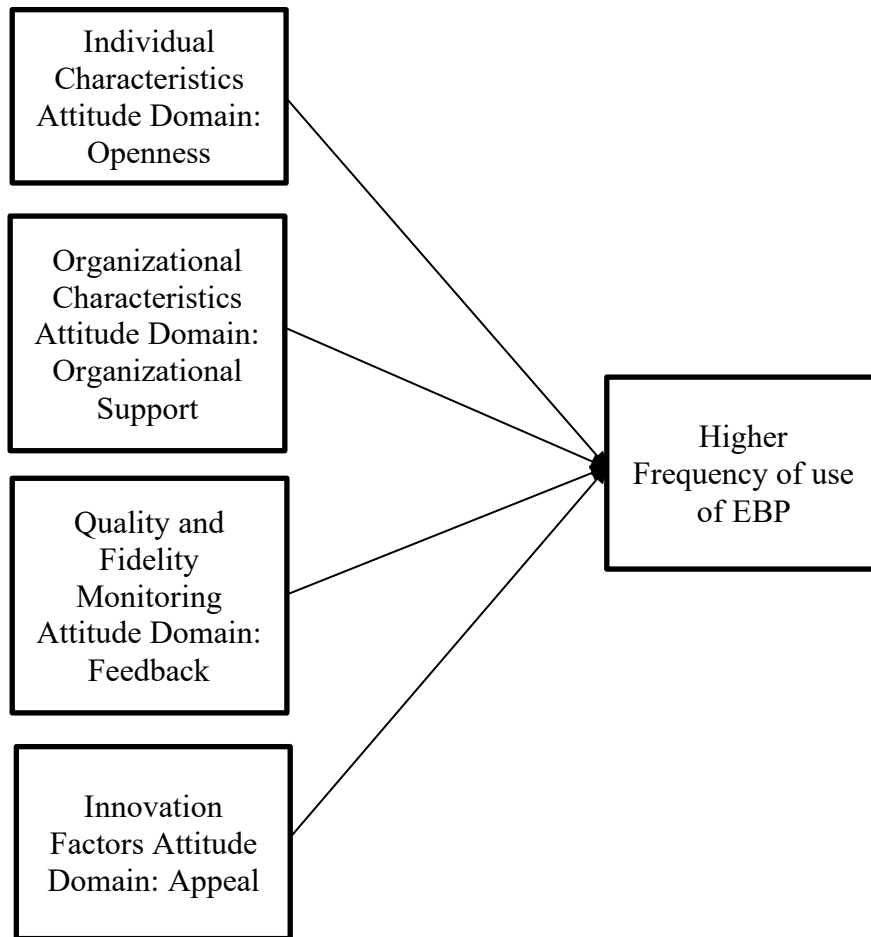


Figure 1.2: Aim 1 Visualization of EPIS Inner Context and Innovation Factors Constructs and Use of EBP

Aim 2 (Chapter 3): Attends to the Implementation Phase of the EPIS framework by qualitatively exploring Southern California substance use providers’(N=21) perceptions of the barriers/facilitators of implementing MOUD and the problem-solving and adaptations they utilize to help with the implementation of MOUD. The EPIS framework is used to guide the qualitative questionnaire, focusing on the individual characteristics of providers in the inner context, innovation factors such as the characteristics of MOUD in terms of the outcomes that are expected, funding, and the bridging factors, such as the relation between policy and practice. Qualitative data analysis was conducted using situational analysis.^{51,52}

Aim 3 (Chapter 4): Attends to the Sustainment Phase of the EPIS framework to identify what factors, such as ownership of a facility (private for-profit, private non-profit, government-owned), accreditation, and funding (insurance type, grant funding) relate to offering MOUD in practice. N-SSATs data is analyzed using multiple logistic regression methods with the following hypotheses:

H1: Private for-profit facilities, compared to facilities that are private non-profit or government-owned, will be more likely to offer MOUD.

H2: Facilities with accreditation will be more likely to offer MOUD.

H3: Organizations that receive government funding will be more likely to offer MOUDs than those that do not receive government funding.

H4: Organizations that accept private health insurance will be more likely to offer MOUD.

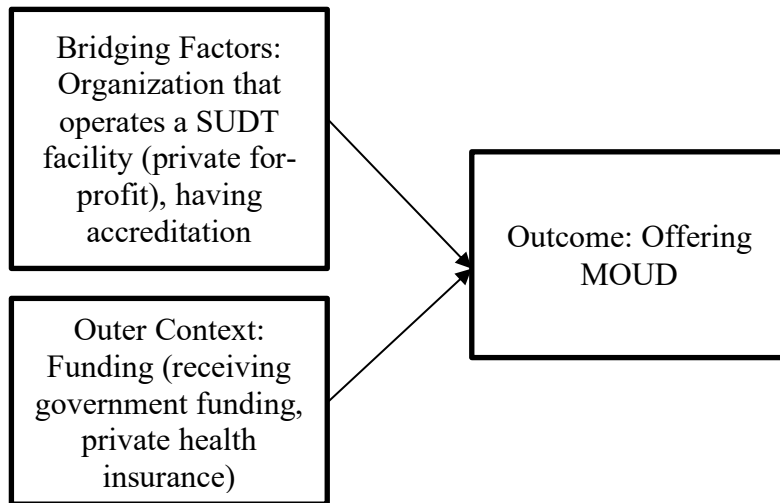


Figure 1.3: Aim 3 Visualization of EPIS Constructs and Offering MOUD

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CHAPTER 2: ASSOCIATIONS BETWEEN PROVIDERS' ATTITUDES AND USE OF EVIDENCE-BASED PRACTICE IN CALIFORNIA

ABSTRACT

Background: Implementing evidence-based practice (EBP), such as using the best available evidence that has been proven successful for desired outcomes, in substance use disorder treatment (SUDT) is not keeping up with scientific advances. Understanding the factors influencing EBP use in SUDT providers could help implement EBP. Providers' attitudes toward EBPs are related to their use of EBP but assessing the different domains of attitudes in SUDT providers in relation to their use of EBP has not been examined. These domains include the burden of learning new EBP, job security, openness to trying new EBP, organizational support, requirements of using EBP, feedback, monitoring, limitations of EBP, fit of an EBP, divergence of thinking one's clinical experience is more important than EBP, appeal of an EBP, and balance of science and therapy. This article describes how different domains of attitudes toward EBPs are related to SUDT providers' frequency of using EBP.

Methods: From October 2021-January 2022, 101 providers in California who work in the substance use treatment field participated in an anonymous online survey using questions from the Evidence-Based Practice Attitude Scale (EBPAS)-36 to assess their attitudes toward using EBPs and the Evidence-Based Practice Questionnaire (EBPQ) to examine the use of EBP with higher scores meaning a higher frequency of use of EBP. Participants were recruited through non-probability techniques such as voluntary response, purposive, and snowball sampling. Bivariate analyses were used to address associations between the different attitude domains and their association with the practice of EBP. A hierarchical linear regression model was used to assess what attitude domains are related to the practice of EBP.

Results: The participants (n=101) of this study were majority White (63.4%), women (54.5%), who were 20-39 years old (54.5%), and over half of them held a master's degree or doctorate (55.4%). Bivariate linear regressions found that openness ($\beta=0.50$, 95% CI=0.46, 0.97), organizational support ($\beta=0.41$, 95% CI=0.28, 0.78), requirements ($\beta=0.40$, 95% CI=0.22, 0.63), feedback ($\beta=0.49$, 95% CI=0.45, 0.97), monitoring ($\beta=-0.31$, 95% CI=-0.48, -0.11), and appeal ($\beta=0.63$, 95% CI=0.61, 1.02) were all associated with the use of EBPs. Hierarchical linear regressions found that higher scores of the appeal of an EBP ($\beta=0.42$, 95% CI=0.29, 0.80) were associated with the practice of EBPs.

Conclusion: The substance use field continues to fall behind in EBP use and its implementation. Specific implementation factors, such as the appeal of EBP, can be addressed for better success in implementing EBP. Continued research is needed on how to impact providers' attitudes toward EBPs to further enhance the use of EBPs in SUDT, such as making EBPs more appealing to providers. Action is necessary to close the research-to-practice gap in the substance use field and expand the use of evidence-based practices that can effectively help people seeking treatment for a substance use disorder.

BACKGROUND

Evidence-Based Practice in Substance Use Disorder Treatment

Substance use disorder treatment (SUDT) is not keeping up with current scientific advances in research.¹ Evidence-based practice (EBP) is defined as using the best available evidence that has been proven successful and replicated in multiple settings to provide effective and efficient care for patients.^{2,3} EBP consists of therapies, interventions, or treatments supported by research and evidence.⁴ In SUDT, about 30-40% of patients do not receive evidence-based treatment and of the 25% who do, receive ones that are harmful or inappropriate.⁵ Barriers and facilitators to implementing EBP have occurred in nursing, mental health, and community health settings, often combining SUDT with mental health rather than parsing out SUDT.^{2,4,6-9} Therefore, this study seeks to understand what factors are related to the use of EBPs, which will be referred to as using general practices that are evidence-based rather than specific therapies or treatments, in SUDT providers to fill in the gap of where implementation efforts are needed.

An implementation science approach is imperative in understanding the implementation factors that influence the use of EBPs in SUDT. Implementation science is best described as the study of methods and factors that influence the uptake and use of EBP at multiple levels, such as at the individual, organizational, and system levels.^{10,11} In implementation research, providers' attitudes toward EBPs have been essential to them using EBP and making implementation successful.¹² Well-researched theories, such as the theory of planned behavior and the diffusion of innovation theory, also suggest that attitudes are necessary in predicting if someone engages in a behavior.^{7,13-16} Providers play a significant role in the success of implementing EBP into clinical practice in that they are the ones that are asked to use them. For that reason, it is essential

to understand the range of providers' attitudes toward EBP and their relation to their use of them to better tailor implementation efforts.¹⁷

Attitudes in implementation science are examined as how favorably one perceives using EBP.¹² Implementation is a multilevel process, and attitudes should also be acknowledged as existing at multiple levels as they are influenced by the different systems that exist in treatment settings. For example, there is a range of attitudes toward EBP spanning from the individual and organizational level that may be more important in predicting behavior than general attitudes toward using EBPs.^{12,17} Thus, this study aims to fill a gap in scientific knowledge by taking an implementation science approach in examining how substance use providers' attitudes toward EBPs relate to their use of EBP. Below, we will review the literature on the implementation framework that guided this study, attitudes toward EBPs in mental health providers and SUDT providers, and the different attitude domains and how they are related to the implementation of EBPs.

EPIS Framework

This study utilized the implementation science framework, the Exploration, Preparation, Implementation, Sustainment (EPIS) Framework, which can guide how EBP becomes standard practice in SUDT settings.¹⁸⁻²⁰ EPIS suggests that both the clinician and organizational setting must be considered when looking at the implementation of EBPs in practice, along with the innovation factors of the EBP.²¹ This study focuses on the exploration phase, which occurs before implementation, to understand what is needed to make the uptake of EBPs successful, and to best address the different attitude domains as implementation factors of the use of EBPs.¹⁸⁻²⁰ Since this study takes place in the exploration phase, we did not assess the use of specific EBP,

but rather the use of EBP, in general, to better assess what factors may influence future EBP implementation in SUDT. EPIS also has four constructs, but this study will only focus on two of them: the inner context, which refers to the characteristics of an organization and providers and quality and fidelity monitoring, and the innovation factors, which focus on the characteristics and fit of the EBP being implemented.¹⁸⁻²⁰ Starting at the inner context helps identify which areas in the organization and providers may need to be addressed to make implementation successful. Providers are the ones that are being asked to use the EBP, and the organization can influence the uptake of EBP in providers by offering support and requirements to use them. This study looks at the specific constructs of EPIS concerning the attitudes of practitioners that involve the inner context elements of the individual characteristics of providers, organizational characteristics, and quality and fidelity monitoring, along with the construct of innovation factors, which are related to the appeal and fit of EBPs.^{17,22,23}

Attitudes toward EBPs in Mental Health Providers and SUDT Providers

Research on attitudes toward EBPs often reports on mental health providers without specifying if they work in SUDT, as the two can have some overlap. Therefore, looking at the attitudes toward EBP in mental health providers and the limited research on SUDT providers may garner some insight into what factors relate to their attitudes toward EBP, but research tends to be mixed. Studies on mental health providers have found that there was no difference in attitudes toward EBPs when comparing clinicians with a Master's or Doctoral degree to those with an Associate's or Bachelor's degree and that that age, years of training, clinical experience, and the number of hours of supervision was not be related to attitudes toward EBP.⁸ However, other studies involving mental health providers have found that being female, younger, and fresh

out of school have been related to positive attitudes toward EBP.^{2,5,9} Some studies have found that SUDT providers with higher job positions, such as management and clinical supervisors, and those with graduate degrees, are more likely to support EBP and have favorable attitudes toward them.²⁴⁻²⁶ Researchers suggest that education level may not be as important as the type of resources provided to staff regarding using EBP in mental health and SUDT providers.^{8,27,28} There are mixed results on provider-level characteristics related to providers' attitudes toward EBPs. More of this research has been done on mental health practitioners without noting if they work in SUDT.

Additionally, in 2004 a study called the Practice and Research Collaborative (PARC) was conducted in Californian community-based programs to assess SUDT providers' perspectives on the effectiveness of certain EBPs and their use.²⁷ The EBPs surveyed included Motivational Enhancement Therapy, Supportive Expressive Psychotherapy, Community Reinforcement Approach, Matrix model, Voucher-based reinforcement therapy, and empirically supported pharmacological interventions. There was no significant difference between staff and supervisors in their perceived effectiveness of these interventions.²⁷ While this study provided important data about provider perspectives of EBP, there remains a scientific gap in examining SUDT providers and, more specifically, what factors may make them more likely to implement EBP into practice. Past research has focused on how providers' characteristics are related to attitudes toward EBP, but little research has focused on how different attitudes are related to the practice of EBP.^{6,7,12}

How Different Attitude Domains are Related to the Implementation of EBPs.

Attitudes toward EBP influence clinicians' (those working as behavioral or mental health providers) intention to use EBP and predicts the extent to which they use them.^{21,29} There has

been research on attitudes as feeling positively or negatively toward EBPs and their association with using EBP among SUDT providers. Still, little research has focused on how different attitude domains relate to SUDT providers' frequency of EBP use.^{7,12,30} It is suggested that providers' attitudes toward EBP can be influenced at the personal, organizational, and service levels.⁴ Attitudinal domains relevant to EBP implementation include the burden of learning EBPs, job security, openness to new EBPs, organizational support, requirements, feedback, monitoring, limitations of EBPs, the fit of an EBP, divergence, appeal of an EBP, and the balance of science and therapy skills.^{4,17,31} These domains will be explored in more detail below and come from past studies of providers' attitudes toward using EBP.³¹

Individual characteristics of EBP adopters' attitudes include their openness to try new interventions, having time to learn new things, and valuing their job security. Past studies looking at providers in mental health settings found that being older and being a woman are related to being open to new EBPs.^{17,22,23} In health care practice, lack of time, resources, and familiarity have been associated with barriers to implementing and using EBPs.^{2,8,32,33} EBP implementation that requires minimal staff time has more buy-in and is more likely to be used long-term by providers.^{4,34,35} Openness is a significant factor that can impact a provider's decision to use an EBP, and having providers who are more open to EBPs can create a learning environment within an organization.⁴ However, little research has been done on these individual attitudes in SUDT providers.

At the organizational level, attitude domains relate to how providers perceive the support they receive from their organization and if they are required to use an EBP by their organization. Lack of training for EBP, lack of incentives for using EBP, lack of support, and inadequate organizational infrastructure are barriers to using EBP in healthcare settings.^{2,8,32,33} There has

been a concerted effort to get EBP disseminated into SUDT. Training SUDT providers in cognitive-behavioral therapy (CBT), a well-known EBP, increased their intention to use CBT and their confidence in using it.^{36,37} However, SUDT organizations have been found to not provide their clinicians with enough formal training in EBP or supervision to ensure their use and adherence.³⁸ Implementation research on EBP implementation in SUDT often focuses on the characteristics of the individual using an EBP and the innovation or intervention.³⁹

Organizational characteristics that may affect the implementation of EBP are less represented in research, even though they are important factors when disseminating EBP into practice.³⁹

Quality and fidelity monitoring, such as being monitored or being given feedback, are related to attitudes toward EBP. Quality and fidelity monitoring is part of the inner context as it exists within the organization. When trained in EBPs, the necessary supervision and fidelity monitoring are not followed up.³² In past studies, continued monitoring and feedback when implementing EBP is associated with less staff burnout and turnover.^{40,41} Therapists have been found to endorse EBP more when they feel they have more support from leadership.³⁵

Lastly, the innovation fit of an EBP is also related to providers' attitudes toward an EBP, such as how well it fits with their practice, if it meets clients' needs, and if it is appealing. Clinicians' attitudes toward EBP can also address innovation fit. They may perceive clinical experience as more of an art than a science or that clinical experience is more important than EBP, which is called divergence. In past studies, providers have cited EBP as having rigid protocols and too narrow of a focus, EBP not applying to the population they work with, and EBP being too costly as reasons for not using them.^{2,8} Additionally, health and substance use service providers tend to gravitate toward "folk wisdom," clinical intuition, or the guidance of their own experience rather than relying on evidence-based practice.³³ Clinicians have also been

found to endorse perceiving EBPs as not clinically useful and less important than clinical experience.⁹ A study conducted in a large public mental health system found that clinicians who perceived their clinical experience as more important than EBP had less knowledge of EBPs and would use psychodynamic techniques rather than evidence-based modalities.^{4,8,21}

Psychodynamic techniques include therapy focused on how a client's unconscious processes and past experiences affect their behavior.⁴²

This study utilized an implementation science approach to understand what attitudinal domains are associated with substance use providers' use of EBP. It was hypothesized that attitude domains pertaining to individual characteristics, such as a provider's openness to an innovation/EBP, organizational characteristics, such as organizational support, quality and fidelity monitoring, such as feedback, and innovation factors, such as the appeal of an EBP, would be significantly associated with the practice of EBPs. The goal of this study was to explore SUDT providers' attitudes in relation to the practice of general EBPs to help increase the knowledge of what implementation factors will enable the use of EBP in SUDT.

METHODS

Sampling and Data Collection

A cross-sectional anonymous web survey through Qualtrics was conducted with 101 respondents in California from October 2021-February 2022. This study was part of a larger study looking at substance use providers' perceived barriers and facilitators toward substance use treatment. The results presented in this paper only consist of the data related to evidence-based practice, about one-third of the survey.

Eligibility criteria consisted of being 18 or older and working in the substance use field in California. This could include but is not limited to being a drug and alcohol counselor,

behavioral health clinician, case manager, residential worker, addiction specialist, doctor, and any providers that work with people who come to treatment for substance use.

Participants were recruited using techniques such as voluntary response and purposive sampling.⁴³ The SAMHSA treatment locator was used to identify 73 treatment facilities in San Diego. After looking at each facility, only 31 were contacted due to multiple facilities being operated by the same entity, some facilities only treating behavioral health and not specifying SUDT, and other facilities being permanently closed or not having working phone numbers or websites. These agencies were contacted via email or telephone, informed of the study, and sent the anonymous Qualtrics link to share with employees to complete. To maintain anonymity, we did not ask which facility providers worked at and did not collect data on which facilities had providers respond. The study flier and survey link were also posted on various online platforms, such as California Social Work and Licensed Family Therapists Facebook groups and Reddit forums for clinicians and people working in the substance use field. Participants were asked to share the survey with others they knew who worked in the substance use field, including employees, co-workers, and statewide networks. People who shared the survey with other participants were not incentivized to do so. All participant data was anonymous.

A power analysis was conducted to determine the sample size. To perform the power analysis, a study used the EBPAS-36 in mental health providers (N=792).⁶ The study examined how individual and organizational predictors were related to attitudes toward EBPs. The authors used hierarchical multiple regressions with a total of 5 steps with 11 predictors, and the outcome was attitudes toward EBPs and observed a medium effect size of $f^2=.23$. They did not report their power, but a post hoc test showed their power was 1.0, which could be due to the large sample size. Thus, a power analysis was conducted using the general guideline of 0.8 for this study. This

showed that a sample size of 84 would be sufficient to detect a medium effect size of $f^2=.23$, with a power of 0.8, an alpha of .05, and 11 predictors. Using G*power, sample sizes were estimated using small (n=850), medium (n=123), and large effect sizes (n=59).^{44,45}

Ethical Considerations

This study was approved by the San Diego State University Institutional Review Board. All participant data was collected, and answers could not be traced back to participants. Participant incentives included a 1 in 10 chance to win a \$50 Amazon gift card. Participants were taken to a separate page to include their email for the raffle, where their emails were not linked to their survey response.

Measures

Participant Demographics

Race/Ethnicity was measured by a five-category variable: White, Hispanic, Asian American and Pacific Islanders, Black/African American, and Native American/Alaskan Native. Participants were also able to write in what race they identified as. Participants could select one or more of the options, creating a sixth category of Other. Race/ethnicity was then dichotomized, with White being the reference group. *Gender Identity* was measured by a seven-category variable: woman, man, transgender female, transgender male, non-binary/gender non-conforming, not listed with a fill-in-the-blank and prefer not to answer. Gender was dichotomized for analysis purposes, with men being 0 and women being 1. Two participants reported being non-binary or prefer not to answer and were treated as missing data. Transgender men were coded as men, and transgender women were coded as women. *Age* was measured as a categorical variable consisting of 18-19, 20-29, 30-39, 40-49, 50-59, 60 and over, and prefer not

to answer. Age was dummy coded with the reference group consisting of those who were 20-29, as being younger in past studies was associated with more positive attitudes toward EBPs.^{2,9,20} None of our participants were 18-19. *Education* was measured by identifying the participant's highest degree earned with the options of GED, high school, associate degree, undergraduate degree, master's degree, doctorate, medical degree, or other with an option to write in an answer. Education was then dichotomized *a priori*, with GED, high school, associates, and bachelor's degrees as one group and master's and doctorate/medical degrees as the comparison group.^{4,6-8} Participants were also asked which *State* they worked in to ensure that participants were from California and could be included in this study, especially since this study was posted on various online platforms that garnered responses from people outside of California.

Dependent Variable-Practice of EBPs

The frequency of use of EBPs was measured using the Evidence-Based Practice Questionnaire (EBPQ).⁴⁶ The EBPQ was initially created for nurses and has expanded to other health professionals. The EBPQ is used to determine the opinions on and the day-to-day use of EBP and consists of three subscales: the practice or use of EBP, attitude towards EBP, and knowledge associated with EBP. EBP is defined as the general concept of practices that are evidence-based. The subscale of the practice and use of EBPs was used as the primary outcome variable. The EBPQ has been used in over 40 countries and translated into 18 different languages and consists of good internal consistency (Cronbach's $\alpha=.87$), construct validity, and discriminant validity.^{46,47} A higher score indicates more frequent use of EBP.⁴⁶ To score the EBPQ, each item is scored from a 1-7, with 1 being "never" and 7 being "frequently." An

average score is calculated for each subscale.^{48,49} The subscale for this study had an internal consistency of $\alpha=.86$.

Independent Variables-Attitude Domains of EBPAS-36

For this study, attitudinal domains or dimensions are operationalized by the Evidence-Based Practice Attitude Scale (EBPAS). EBPAS-36 from Rye and colleagues, adapted from EBPAS-50, was chosen as it measures mental health and social service providers' attitudes toward EBP and expanded on the EBPAS-15 while maintaining the additional domains created for the EBPAS-50.^{4,9,31} In EBPAS-36, EBP is defined as a general concept of integrating the best evidence with one's expertise while considering client characteristics.⁹ EBPAS-36 also asks about the use of interventions and manualized interventions which are types of EBPs backed by evidence. It does not ask about specific EBPs or interventions. EBPAS started with four domains and expanded to include twelve attitude domains, which are the burden of learning EBPs, job security, openness to new EBPs, organizational support, requirements, feedback, monitoring, limitations of EBPs, the fit of an EBP, divergence, appeal of an EBP, and the balance of science and therapy skills.^{4,17,31} Each domain consists of three items. EBPAS-36 measures all 12 domains and has good internal consistency (Cronbach's $\alpha=.79$).⁹ The twelve domains of the EBPAS-36 and how they relate to constructs of the EPIS Framework can be seen in Table 2.1.

Table 2.1: EBPAS and the EPIS Framework Constructs		
EBPAS Domain	Definition ^{8,17,29}	EPIS Framework ¹⁸⁻²⁰
Burden	The time and administrative burden associated with learning EBPs	Inner Context-Individual Characteristics
Job Security	Perceived likelihood of increased job security or professional marketability provided by learning an EBP	Inner Context-Individual Characteristics
Openness	Extent to which the provider is generally open to trying new interventions and would be willing to try or use more structured or manualized interventions	Inner context-Individual Characteristics
Organizational Support	Perceived organizational support associated with learning an EBP	Inner Context-Organizational Characteristics
Requirements	Extent to which the provider would adopt an EBP if it were required by an agency, supervisor, or state	Inner Context- Organizational Characteristics
Feedback	Positive perceptions of receiving feedback related to providing services	Inner Context- Quality and fidelity monitoring
Monitoring	Negative perceptions of monitoring or oversight by supervisors	Inner Context-Quality and fidelity monitoring
Limitations	Limitations of EBPs and their inability to address client needs	Innovation Factors
Fit	Fit of the EBP with the values and needs of the client and clinician	Innovation Factors
Divergence	Provider perceives EBPs as not clinically useful and less important than clinical experience	Innovation Factor
Appeal	Extent to which the provider would adopt an EBP if it were intuitively appealing, could be used correctly, or was being used by colleagues who were happy with it	Innovation Factors
Balance	Content that addresses perception of skills and downplays the role of science in therapy	Innovation Factors

The domains that map onto the EPIS construct inner context element of individual characteristics consist of burden (Cronbach alpha for current sample $\alpha=0.88$), job security ($\alpha=0.81$), and openness ($\alpha=0.80$). The domains for the inner context element of organizational characteristics consist of organizational support ($\alpha=0.75$) and requirements ($\alpha=0.89$). The domains of feedback ($\alpha=0.76$) and monitoring ($\alpha=0.87$) are consistent with the inner context element of quality and fidelity monitoring. The construct of innovation factors consist of the domains limitations ($\alpha=0.90$), fit ($\alpha=0.84$), divergence ($\alpha=0.74$), appeal ($\alpha=.081$), and balance ($\alpha=0.64$). In past studies, Cronbach's alpha for balance ranged from 0.64-0.79.^{6,10,29} Each item assesses to what extent the participant agrees with each statement and is scored on a scale from 0-4, 0 being "Not at all" and 4 being "Very great extent."^{4,9,31}

In the case of missing data, computing means for the subscales was allowed to be done for one fewer item than make up the scale.⁹ Following this rule, all scales were made up of three questions, and if missing data meant that only one answer for a subscale was present in the data, then the subscale for that participant was not created. The sub-scales were all independent of each other and did not overlap in questions.

Data Analysis

Study data were collected using Qualtrics and converted to an SPSS-compatible file. All analyses were conducted using SPSS Version 28.⁵⁰ All independent variables were tested for multicollinearity through correlation analysis, as seen in Table 2.2. If two domains had a Pearson correlation coefficient of $>.60$, the domain with the lowest correlation coefficient with the practice of EBPs, the dependent variable, was excluded from further analysis.⁵¹⁻⁵⁴ The domains that ended up being excluded from the multivariable analysis due to multicollinearity were job security, burden, and fit.

Bivariate linear regression analyses were used to assess the association between each attitude domain and the outcome of the practice of EBPs. Attitude domains that were not significant in bivariate analysis were not included in further analysis to assess their association with the dependent variable when adjusted for all other included subscales. The variance of inflation factors (VIF) was also assessed by looking at a VIF of 5 or higher.⁵¹ Data was checked to verify that it met all assumptions to run linear regressions. The residuals of the regressions were plotted and analyzed to assess if they met the normal distribution.

Table 2.2: EBPA-36 Attitude Domains Intercorrelations

Subscales	1	2	3	4	5	6	7	8	9	10	11
(1) Burden	-										
(2) Job Security	.33**	-									
(3) Openness	-.02	.40**	-								
(4) Organizational Support	-.09	.60**	.55*	-							
(5) Requirements	-.15	.23*	.158	.19	-						
(6) Feedback	-.19	.16	.50*	.37*	.33**	-					
(7) Monitoring	.73**	.28**	-.16	-.18	-.19	-.26*	-				
(8) Limitations	.70**	.19	-.06	-.27*	-.19	-.19	.61**	-			
(9) Fit	-.28**	.09	.33*	.33*	.55**	.42**	-.27**	-.32**	-		
(10) Divergence	.61**	.22*	-.04	-.10	-.26*	-.15	.52*	.58**	-.39**	-	
(11) Appeal	-.37**	.14	.38*	.36*	.50**	.43**	-.34**	-.39**	.80**	-.42**	
(12) Balance	.40**	.31**	.14	.13	.03	.04	.54**	.38**	.17	.28**	.06

*Significance at the $p < .05$, **significance at the $p < .001$

Descriptive statistics for participant demographic data were conducted. Bivariate relationships between demographic factors and the practice of EBPs were conducted to decide which variables to control for in the multivariable analyses. Demographics for covariates were determined *a priori* and used in the linear regression models, including age, gender, race, and

education. Demographic factors associated with the practice of EBPs at $p < 0.1$ were included in further analysis. None of the demographic variables met this requirement.

Hierarchical linear regression models were used to examine the attitude domains associated with the practice of EBPs. Demographics were only included if significant at the bivariate level, which they were not. In the first block, all attitude domains pertaining to the inner context element of individual characteristics were added. In the second block, attitude domains related to the inner context element of organizational characteristics were added. For the third block, attitude domains in the inner context element of quality and monitoring were included. In the fourth block, attitudinal domains related to innovation factors were included. The alpha level used to test significance was .050.

Missing Data

A detailed analysis of the missing data was conducted in SPSS. First, frequencies of all demographic questions and questions related to the practice outcome and EBPAS-36 domains were conducted. Then a missing analysis was done by using the Little's Missing Completely at Random test in SPSS.⁵¹ When looking at the raw data, 145 participants from California had started the survey. There was no missing data for race, age, or gender for the demographic questions. One participant did not report their education level. The type of missing data was assessed, whether it was missing at random or missing not at random, for each of the questions that were related to the domains of interest before computing the domains. For the Little's MCAR test, a significance value of < 0.05 indicates that the data are missing not at random.⁵¹ The p-value of the MCAR test was 0.447 so the data was missing completely at random.

Of the 145 participants, 44 participants were missing data to all of the questions needed for this study and were therefore deleted, rather than imputing 30% of the data, which is not recommended.⁵¹

For the further missing data, chi-square analyses ($p < .05$) were conducted using the demographics of race, gender, and education and the 12 EBPAS domains and the EBPQ practice domain to determine if there was a significant difference between those who answered questions and those who did not. The 12 domains and practice domain were first recoded into dichotomous variables consisting of 0=not missing data and 1=missing data.⁵¹ All domains were missing data ranging from 3-6 participants. None of the chi-square analyses were significant at the $p < .05$ level, therefore there was no statistically significant relationship between participants with missing data and those who were not missing data.

RESULTS

Sample

Table 2.3: Participant Characteristics	
Characteristics	N (%)
Race/Ethnicity	
White	64 (63.4%)
Non-White	37 (36.6%)
Gender Identity	
Woman	54 (54.5%)
Man	45 (45.5%)
Age	
20-29	13 (12.9%)
30-39	42 (41.6%)
40-49	23 (22.8%)
50-59	13 (12.9%)
60 and over	10 (9.9%)
Highest Level of Education	
GED/High School/Associate Degree, Undergraduate Degree	45 (44.6%)
Master's Degree (MSW, MFT, MA, MPH, etc)/Doctorate Degree (PhD, MD, etc)	56 (55.4%)
Credentials	
Clinical (MSW, ACSW, ASW, LCSW, APCC, LPCC, Licensed Psychologist)	40 (39.6%)
Medical (NP, MD, PA)	12 (11.9%)
Alcohol and Drug Specific Credentials (CATC, CADC II, CADC III, CADC-CAS, CADS, LAADC, SUDCC, SME, RADT)	38 (37.6%)
None	11 (10.9%)
Type of Substance Use Provider	
AOD Counselor	26 (25.7%)
Behavioral Health Clinician	22 (21.8%)
Medical Provider	17 (16.8%)
Outreach Worker	6 (5.9%)
Inpatient Provider	6 (5.9%)
Psychiatrist	9 (8.9%)
Intern	3 (3%)
Other (Case Manager, Counselor, Crisis Couch, Director, Program Manager, Sober Living Manager, RADT, LCSW in medical setting)	11 (10.9%)

Participant characteristics are provided in Table 2.3. A total of 101 participants responded, with most participants being white (63.4%), women (54.5%), and 20-39 (54.5%). No participants reported being 18-19. For education, 44.6% of participants had a GED, high school,

associate's, or bachelor's degree, and 56% had a master's or doctorate. Participants have worked in the substance use field from less than a year to over 35 years, with a mean of 8.55 years (SD=8.01). Regarding credentials, 40 participants had behavioral health and therapy-related credentials, such as those related to the social work or counseling field, and 38 participants had alcohol and drug-specific credentials, such as being Certified Alcohol and Drug Counselors.

Participants were asked what type of substance use provider they were. Answers ranged from Alcohol and Other Drug (AOD) Counselor (25.7%), behavioral health clinician (21.8%), and 11% reported other, which included case managers, program director/manager, and a sober living manager. There were discrepancies in what people reported as 17 people labeled themselves as medical providers, but only 12 stated they had a medical credential. This could be due to differences in how job titles are labeled throughout the substance use treatment landscape or how people personally identify their job. Some participants who reported "other" stated they were counselors, RADT, and LCSW in a medical setting, which could overlap with being behavioral health clinicians and relate to the larger number of clinical credentials in participants.

EBP Practice and Attitude Mean Scores

For the dependent variable, the use of EBP (M=5.04, SD=1.10), there was a moderately high mean score in participants, suggesting that participants generally used EBP. For the attitude domains, a score below 2 indicates a low rating, a score from 2-3 is moderate, and a score of 3 or more is high. Participants rated the burden of EBP (M=1.54, SD=1.18), monitoring (M=1.84, SD=1.13), limitations (M=1.49, SD=1.20), and divergence (M=1.87, SD=1.49) to a lower extent than other domains. Participants rated job security (M=2.22, SD=1.04), openness (M=2.73, SD=0.74), organizational support (M=2.75, SD=0.83), requirements (M=2.77, SD=1.00),

feedback (M=2.92, SD=0.75), and appeal (M=2.97, SD=0.83) to a moderate extent. Fit (M=3.15 SD=0.85) had a high score. They rated balance (M=2.52, SD=0.85) to a moderate extent, suggesting participants saw their clinical experience as a balance of art and science and that their clinical experience was more important than a particular approach.

Table 2.4: Attitude Domains Mean Scores and Standard Deviation			
Scale	n	Mean	SD
Practice of EBPs	98	5.04	1.10
Burden ^a	96	1.54	1.18
Job Security	95	2.22	1.04
Openness	97	2.73	0.74
Organizational Support	95	2.75	0.83
Requirements	96	2.77	1.00
Feedback	95	2.92	0.75
Monitoring	96	1.84	1.13
Limitations	96	1.49	1.20
Fit	97	3.15	0.85
Divergence	98	1.87	1.49
Appeal	97	2.97	0.83
Balance	96	2.52	0.85

Bivariate Regression Analysis

The results of the bivariate linear regression analyses are presented in Table 2.5. Openness ($\beta=0.50$, 95% CI=0.46, 0.97), organizational support ($\beta=0.41$, 95% CI=0.28, 0.78), requirements ($\beta=0.40$, 95% CI=0.22, 0.63), feedback ($\beta=0.49$, 95% CI=0.45, 0.97), fit ($\beta=0.54$, 95% CI=0.46, 0.90), and appeal ($\beta=0.63$, 95% CI=0.61, 1.02) were associated with more use of EBP. Negative perceptions of monitoring ($\beta=-0.31$, 95% CI=-0.48, -0.11) were associated with less use of EBPs

Table 2.5: Bivariate Regressions of Attitude Scores Associated with Practice of EBPs			
Attitudinal Domain	Standardized β	95%CI	p
Openness	0.50	0.46, 0.97	<.001
Organizational Support	0.41	0.28, 0.78	<.001
Requirements	0.40	0.22, 0.63	<.001
Feedback	0.49	0.45, 0.97	<.001
Monitoring	-0.31	-0.48, -0.11	0.003
Limitations	-0.19	-0.36, 0.01	0.063
Divergence	-0.16	-0.39, 0.04	0.117
Appeal	0.63	0.61, 1.02	<.001
Balance	0.20	-0.01, 0.51	0.055

Hierarchical Regression Analysis

Table 2.6 shows the hierarchical linear regression analysis results. The overall regression was statistically significant ($R^2=.51$, $F(6,84)=14.80$, $p<.001$). The results from step 1, where only the attitude domain pertaining to individual characteristics were entered, had an $\Delta R^2=0.25$ and showed that openness ($\beta=0.50$, 95% CI=0.46, 0.99) was significantly associated with the practice of EBP. Model two, consisting of organizational characteristics, had an $\Delta R^2=.11$ and found higher scores of openness ($\beta=0.38$, 95% CI=0.25, 0.84) and requirements ($\beta=0.29$, 95% CI=0.13, 0.51) were significantly associated with the practice of EBP. In model three, quality and fidelity monitoring domains were entered, had an $\Delta R^2=.05$ and found higher scores of openness ($\beta=0.28$, 95% CI=0.10, 0.72) and requirements ($\beta=0.23$, 95% CI=0.06, 0.45) were associated with the practice of EBP. In the final model, the domain related to innovation factors was added. Higher scores of the appeal of an EBP ($\beta=0.42$, 95% CI=0.29, 0.80) were associated with the practice of EBP. The results of the hierarchical regression suggest that innovation factors, tested in model 4, explained an additional 10%, $\Delta R^2=.10$, of the variance of the practice of EBP.

Table 2.6: Hierarchical Multiple Regression with Attitudinal Domains Associated with Practice of EBP

		Practice of EBPs			
		ΔR^2	Standardized β	95%CI	p
Step 1- Individual Characteristics		0.25**			
	Openness		0.50	0.46, 0.99	<.001**
Step 2- Organizational Characteristics		0.11**			
	Openness		0.38	0.25, 0.84	<.001**
	Organizational Support		0.14	-0.09, 0.45	0.196
	Requirements		0.29	0.13, 0.51	0.001**
Step 3-Quality and Fidelity Monitoring		0.05*			
	Openness		0.28	0.10, 0.72	0.011*
	Organizational Support		0.10	-0.13, 0.39	0.324
	Requirements		0.23	0.06, 0.45	0.010*
	Feedback		0.20	-0.01, 0.59	0.059
	Monitoring		-0.14	-0.30, 0.03	0.111
Step 4- Innovation Factors		0.10**			
	Openness		0.20	0.00, 0.58	0.052
	Organizational Support		0.06	-0.17, 0.32	0.533
	Requirements		0.08	-0.11, 0.28	0.398
	Feedback		0.15	-0.06, 0.49	0.118
	Monitoring		-0.06	-0.22, 0.10	0.441
	Appeal		0.42	0.29, 0.80	<.001**

*Indicates significance at the $p < .05$ level, **Indicates significance at the $p < .001$ level

DISCUSSION

This study was guided by the EPIS framework and utilized the EBPAS-36 to assess the different attitude domains related to attitudes toward using EBPs and how they are associated with the practice of EBPs in SUDT providers. A total of 101 providers participated in this study, with the majority being White women with a master’s degree and above and many being

behavioral health clinicians or AOD counselors. Overall, we found that the innovation factor of the appeal of an EBP is strongly associated with the use of evidence-based practice (EBP) in substance use disorder treatment (SUDT). Although hypothesized, attitude domains related to individual characteristics, quality and fidelity monitoring, and organizational characteristics were not associated with the practice of EBPs in the hierarchical regression model. However, the individual characteristic of openness was almost significant at $p=.052$.

Like previous studies, our findings suggest that provider demographics such as age, race, gender, and education are not associated with the practice of EBP.^{4,24-27} Past studies have found that younger providers are more likely to use EBP, with past researchers suggesting this may be due to them being newly out of school and having EBP at the forefront of importance.⁹ Past research has also found that being a woman is associated with having more positive attitudes toward EBP.^{17,22,23} Participant characteristics were not significantly related to the use of EBPs in this study, suggesting that attitudes are more important when it comes to implementing EBPs than provider demographics and can be better targeted for implementation.

Identifying the provider variables that may affect the attitudes toward EBPs is essential in creating effective implementation interventions.⁸ Specifically, the attitude domains of openness and the appeal of innovation are potential targets for implementing EBP. Although the domain of openness was slightly under the threshold for significance, it is important to look at it in relation to appeal. When the EBPAS was first created, openness and appeal were expected to be different in that openness was meant to be related to attitudinal disposition, and appeal is more related to the intuitive perception a provider would feel toward an EBP.⁴ Past research that has used EBPAS has found high correlations between openness and appeal, suggesting that the appeal of an EBP may be a facilitating factor in being open to trying a new innovation.⁴ This may be why

openness was no longer significant once appeal was added into the model, but it still may be worth looking at as an implementation factor.

Openness, as measured in the EBPAS-36, assesses the extent to which a provider is open to trying new interventions, especially ones that are more structured or manualized.^{6,9,31} Openness to innovation can extend into the organizational context and encourage the development of learning organizations.¹² In studies focusing on mental health care, clinicians with less experience reported more openness to try EBP, which could be related to their willingness to learn and grow in their field.^{18,55} In addition, past studies found that clinicians felt manualized treatment did not offer flexibility or fully address their clients' needs, which could be more related to the fit of an EBP than providers' openness to using it.⁸

When it came to the innovation fit of EBPs, the appeal of an EBP, such as it making sense to them or knowing colleagues who had been happy with it, were indicators of practicing EBPs. Some reasons that psychotherapists have cited for not endorsing EBPs have been the lack of generalizability when it comes to the research and looking at randomized controlled trials versus real-world clinical practice, lack of psychosocial stressors that exist in the study population, lack of diversity, and how EBP focus on different outcomes than what clients tend to come to therapy for.⁵⁶ Psychotherapists that subscribe to a more intuitive approach have been found to have more negative attitudes toward research, be less open to EBP, and be less willing to use EBP.⁵⁷ However, in SUDT providers, knowing that an EBP is effective and helpful to their clients, along with staff buy-in, were found to be an important facilitating factor in them implementing EBPs such as Motivational Interviewing, Assertive Community Treatment (ACT), and Cognitive-Behavioral Therapy (CBT).⁵⁸ Therefore, implementation efforts could focus on engaging with providers and understanding their perceptions of the EBPs, their buy-in, and if the

EBP makes sense to them and fits with their clients when looking to implement a new EBP into SUDT practice.

Additionally, negative perceptions of specific EBP have predicted the discontinuation of their use.³⁵ Implementation science focuses on bringing EBP into practice and their successful sustainment. If providers already have a negative attitude or perception of an EBP, then the sustainment of it may be temporary. Providers are more willing to use EBP if they fit with the clients that they are serving.³⁵ Making sure an EBP that will be implemented appeals to the providers who are intended to implement them is essential in ensuring the successful use and sustainment of EBPs. This can be done by assessing attitudes and perceptions of a new EBP before implementing a new EBP, which is part of the Exploration phase of EPIS. Providers can be utilized as implementation factors as they are the ones that are being asked to adopt EBP into practice.

Lastly, there has been a strong emphasis on the relationships between providers and organizational characteristics, such as readiness for change and the implementation of EBP, so it is interesting that organizational characteristics did not end up being significantly related to the practice of EBPs in this study.^{58,59} One explanation is that the EBPAS attitude domains may be more complex and interrelated to each other than thought. Organizational support, requirements, feedback, and monitoring were significantly associated with EBP use at the bivariate level but not when assessed with openness and appeal. In a study that looked at 178 SUDT providers, factors such as training and supervision, having organizational support, working under a skilled coworker, collaboration with the organization, buy-in from staff, and perceiving the EBP as effective were the most important facilitators of EBP implementation.⁵⁸ Additionally, clinicians who adhere to more feedback and monitoring have been found to use them more.⁶⁰ In our

sample, it could be that being more open to new EBPs and the appeal of the innovation are more important to participants and that their use of EBP is less dependent on the organization factors or quality and fidelity monitoring. Assessing these domains with a larger sample size may help shed more light on whether organizational characteristics and quality and fidelity monitoring are related to the practice of EBP or if implementation studies should emphasize providers and the appeal of an EBP being implemented as implementation factors.

LIMITATIONS

A limitation of this study is the low response rate with participants starting and completing the survey, which is common in web-based surveys.⁶¹ The low response rate could be due to the survey length, as this study was part of a larger survey. There was a total of 145 started surveys, but only 101 were completed, and even these had some missing data when it came to questions in the survey, which could have been missed from survey fatigue. Similar to previous concerns in another study, participants may have been confused by the terms evidence-based practice, evidence-based treatments, intervention, and manualized intervention.⁹ Although the EBPAS-36 starts by explaining these terms before starting the survey, it does not mean participants took the time to read this.

The Cronbach alpha score of the balance domain ($\alpha=0.64$) is a limitation. Although some researchers suggest a score of 0.60 is an acceptable level of reliability, the interpretations of results should be made with caution.⁶² In addition, the balance domain in other studies has had consistently moderate alpha scores, ranging from 0.64-0.79, suggesting that the domain may not be consistent when used.^{6,9,31}

Another limitation was the lack of randomization due to our sampling techniques. Participants were recruited out of non-probability sampling techniques such as voluntary

response and purposive sampling, mainly due to limitations with lack of funding and access to participants. Although the flyer and study information was sent to many Southern California facilities, many did not reply. Also, participants were not asked what organization they worked at to protect their anonymity, but this may have helped determine if certain organizations were over-represented. In addition, this data can only be interpreted for providers in California. Future research could expand to other states, compare providers' attitudes and use of EBPs and see if there are differences between states. Lastly, response bias may have occurred since this was a self-report survey. Despite these limitations, this study contributes to understanding how attitudes are related to the practice of EBPs in the SUDT.

CONCLUSION

The substance use field continues to fall behind in EBP use and its implementation. This study examines the attitude domains that may be important implementation factors associated with providers using EBP. Specific implementation factors that can be addressed for better success in implementation are providers' openness toward EBP and the appeal of an innovation/EBP. When exploring whether to adopt an EBP into practice, SUDT facilities may want to consider looking at individual providers as implementation elements who can help with the success of an EBP. Future implementation studies should focus on taking these attitude domains into account when implementing new EBP with providers. Continued research is needed on how to impact providers' attitudes toward EBP to further enhance the use of EBP in SUDT, such as what can increase openness to trying new EBPs and how to make EBPs more appealing to providers. Action is necessary to close the research-to-practice gap in the substance use field and expand the use of evidence-based practices that can effectively help people seeking treatment for a substance use disorder.

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CHAPTER 3: PERCEPTIONS OF MOUD IMPLEMENTATION BARRIERS AND FACILITATORS: A QUALITATIVE STUDY GUIDED BY THE EPIS FRAMEWORK

ABSTRACT

Background: Barriers and facilitators for medication use for opioid use disorders (MOUD) have been researched at the patient, provider, and system levels. This study took an implementation science approach to examine providers' perceived implementation barriers and facilitators of MOUD.

Methods: Purposive and snowball sampling techniques were used to recruit providers (N=21) who worked closely with MOUD in San Diego County from September 2019-February 2022. The interviews lasted from 30 to 60 minutes. Situational analysis was used as a methodological approach to explore the data and map out the human and non-human elements in the interviews. Elements from the situational analysis were then mapped onto the constructs of the Exploration, Preparation, Implementation, Sustainment (EPIS) Framework, and interviews went through a second phase of coding.

Findings: 21 participants working in the substance use field were interviewed, consisting of directors of MOUD programs, health care practitioners, and behavioral health practitioners. Elements of the EPIS constructs pertaining to the outer and inner contexts were found to be both facilitators and barriers of MOUD implementation. For the outer contexts, elements include the service environment and policies, funding for MOUD, funding for patients' needs, funding for providers, inter-organizational environment and networks, and patient/client characteristics. The inner context elements consisted of leadership, training, organizational characteristics, and individual characteristics of adopters.

Conclusion: Decreasing policy and regulatory barriers can increase MOUD access. Introducing less stringent guidelines has been associated with more physicians prescribing MOUD. The United States healthcare landscape is not conducive to treating substance use disorders, and the disconnect between treatment and insurance creates barriers to care. Further research on training physicians and creating curriculums for future providers are pertinent for the future of MOUD implementation.

BACKGROUND

Although there is a growing number of evidence-based interventions and treatments for substance use disorders, the implementation of research to practice gap continues to persist in the substance use field.^{1,2} Medications for opioid use disorders (MOUD) are endorsed by the World Health Organization as an International Standard for the Treatment of Drug Use Disorders, the American Psychiatric Association (APA) as best practice when combined with psychotherapy, and the American Society of Addiction Medicine (ASAM) as a practice guideline.³⁻⁵ MOUD is the most effective treatment for opioid use disorders, especially in reducing opioid use, withdrawals, cravings, and overdose deaths, but its implementation is lagging.^{6,7} In 2019, only one in four people needing treatment for an opioid use disorder received medication.⁸ In addition, the physician adoption and use of MOUD have not been able to keep up with the opioid epidemic, with 96% of states reporting higher opioid use than MOUD treatment capacity.^{4,9,10}

An abundance of research has been done on the barriers and facilitators of MOUD use focused on the patient, provider, and system levels. At the patient level, these barriers consisted of stigma toward using MOUD, seeing MOUD as a “crutch” and not genuinely being sober, previous experience with OUD treatment such as being treated poorly or not feeling supported by staff, prior use of illicit buprenorphine as a negative experience, and the belief that willpower and readiness to change hold more importance for abstinence than medications.¹¹ Patients also listed logistical barriers to starting MOUD, which included high out-of-pocket costs, insurance copays, costs associated with “cash-only” providers who do not accept insurance, difficulty locating buprenorphine providers, provider wait lists, delays to initiation of treatment, policies requiring failing abstinence-based treatment before receiving MOUD, and not having access to transportation or childcare to attend treatment visits.¹¹ Additionally, lack of knowledge and

education on MOUD options was a barrier for patients.¹¹ Facilitators included receiving support from peers, family, and treatment providers. Some studies also found that having positive experiences with illicit buprenorphine became a facilitator in seeking treatment.¹¹

Physician-identified barriers have primarily focused on logistics. One of the main barriers is prescribing guidelines and requiring physicians who want to prescribe MOUD to obtain DATA 2000 waiver, also called the X-waiver. The physician adoption and utilization of MOUD especially have not been keeping up with the opioid epidemic, and there is a significant gap in the number of people who can prescribe compared to the number of patients that would benefit from MOUD.^{4,9} Past studies have found that the top reasons for not receiving the waiver were not having time for more patients and not knowing how to get the waiver.⁴ In April 2021, the Health and Human Services (HHS) moved to exempt physicians from needing the X-waiver if treating less than 30 patients; this does not include hospital-based physicians.¹² In 2017, the ability to obtain this waiver extended to physician assistants and, in some states, nurse practitioners.²

Another issue was that those who had the waiver were not prescribing to their full capacity, citing lack of time for additional patients, not believing in MOUD, having negative attitudes toward MOUD, and insufficient reimbursement rates.^{4,7,11,13} In past studies, over a third of physicians reported that nothing would change their willingness to become waived or prescribe at capacity.^{4,11} The main reason for not being waived was not wanting to be overwhelmed with clients and concerns with diversion.^{4,11} In this case, diversion would be obtaining the medications and using them illegally or selling them to people without a prescription. Physicians also reported the stigma of not wanting to be known as a MOUD provider and attracting more patients with drug use to their practice as a reason for not wanting to prescribe MOUD.¹¹ Providers reported hesitancy in getting waived due to being worried

about the patients it would attract, describing patients with an opioid use disorder as being “high maintenance,” “difficult,” and “unreasonably demanding.”⁷ Diversion was also a concern among physicians, with a quarter of physicians reporting that they hadn’t pursued the waiver due to fears of diversion of MOUD.^{7,11} Physicians’ beliefs about MOUD also were barriers to their prescribing, such as not seeing it as effective, thinking patients had a low need for it, and seeing MOUD as replacing one addiction with another.^{7,11}

Physicians reported not prescribing MOUD due to a lack of education and training in addiction in medical school and residency.¹¹ Physicians also reported a lack of confidence in treating OUD without further training as a barrier.⁷ This gap in knowledge also extends to addiction counselors in substance use treatment. One study of a nationally representative sample of counselors in the United States that took place from 2009-2012 found that 20% of counselors did not know the effectiveness of MOUD and that 90% of them had received little to no training on MOUD.^{11,14} In a rapid review that looked at studies from 2014-2020, professionals in the addiction field who subscribed to abstinence-based approaches disagreed with the use of MOUD, and this stigma of MOUD in professionals can influence patients’ treatment decisions.¹¹

Other physician-level barriers included providers’ concern over the complexity of prescribing MOUD safely, providers worrying about the cost to patients since many insurance companies did not cover the medication, and worries over providing medication to uninsured patients, resulting in their clinics not making money or losing money.⁷ Some physicians have been found to avoid prescribing to clients with Medicaid due to the tedious and time-consuming pre-authorization process.^{6,7} Some studies have found that physicians are more likely to prescribe MOUD to patients paying out of pocket and less likely to prescribe to those on Medicaid. This could be due to reducing the burden of navigating insurance.⁷

Physician-level facilitators included patient need/demand, streamlined clinical protocols and referral pathways, increased reimbursement, training in OUD treatment, peer support, and mentorship.¹¹ Physicians were interested in knowing about local counseling services, being paired with a physician who was experienced in prescribing MOUD, and more courses in OUD, all of which would make them more willing to prescribe.⁴

Barriers at the system level are similar to the ones found at the patient and physician level and mainly focus on logistical or practical issues such as the need for prior authorization before MOUD.¹¹ The main facilitator at the system level has been the expansion of insurance coverage, with the rates of payers that cover MOUD steadily increasing over time.¹¹ When more patients have access to insurance, more patients receive MOUD. The 26 states that participated in the ACA Medicaid expansion saw a 70% increase in Medicaid-covered buprenorphine prescriptions and a 50% increase in buprenorphine spending.¹¹ In California, the Drug Medi-Cal Organized Delivery System (DMC-ODS) was implemented in 2015 to make substance use treatment more accessible and to expand Medicaid care.¹⁵ DMC-ODS also mandates that counties provide MOUD services.¹⁵

Research has focused on the physician, patient, and system levels to understand the barriers and facilitators of utilizing MOUD. This dissertation took an implementation science approach to examine providers' perceived implementation barriers and facilitators of MOUD. This approach allowed for the exploration of how providers were problem-solving and ensuring the implementation of MOUD was successful for their clients.¹⁶ Participants held positions spanning from physicians, program managers, outreach workers, and other substance use providers who specifically work with MOUD were interviewed. My positionality as a researcher comes from working in the substance use disorder treatment field as a therapist and having first-

hand experience with working in a facility that offered MOUD to patients. Instead of focusing on the personal motivation and barriers and facilitators of why providers do not prescribe or recommend treatment or why patients are not on MOUD, we focused on the implementation of MOUD. Our primary research focus was to understand what implementation constructs came up when implementing MOUD treatment.

METHODS

Recruitment and Data Collection of Participants

A combined purposive and snowball sampling method was used to identify providers who work specifically with medications for opioid use disorder (MOUD). A purposive sampling method was chosen as it provides information-rich cases that are knowledgeable on the subject of interest.¹⁷ We specifically used criterion-i sampling as a purposive sampling strategy as it is often used in implementation science studies where participants are drawn from organizations and agencies involved in the implementation process, in this case, implementing MOUD.¹⁷ With this sampling method, participants are assumed to have knowledge and experience with the situation of interest.¹⁷ Snowball sampling consisted of asking participants to identify others who worked closely with MOUD, such as doctors, nurse practitioners, program managers, case managers, and outreach workers, who would be interested in participating in the study.

Participants were contacted through email and were asked eligibility questions once they responded. Eligibility criteria consisted of being over 18, working in San Diego County, and working with MOUD. If the participant was eligible and interested, a time and date for an interview were set up. A total of 21 interviews were conducted, with 11 being in-person in a private place and 10 being over zoom. All interviews were audio-recorded with the permission of the participant. Interviews were conducted from September 2019-February 2022. Interviews

were paused from March 2020 and resumed in August 2021 due to the COVID-19 pandemic. Interviews lasted between 30-90 minutes and were conducted by me and one other researcher. This study was part of the NIH/NIDA R01 DA040648 to understand the impact of drug treatment referrals on the uptake of services and was the focus of the first ten interviews. I joined the study team in 2021 and added questions to the question guide about implementation factors and completed the additional 10 interviews. The first 11 interviews were completed by the lead of the project and were done to understand the referral process of getting patients onto MOUD, along with the involvement of the sheriff's department. The last ten interviews were completed by me and were listened to by both me and the lead of the project.

Study Participants

To understand the implementation of MOUD, 21 participants were recruited and interviewed. Participants all worked with people with an opioid use disorder (OUD) who were on MOUD. Interviews were conducted with directors or managers of MOUD programs (N=6), medical doctors (N=2), a physician assistant (N=1), a nurse practitioner (N=1), therapists (N=6), a certified drug and alcohol counselor who was an outreach worker (N=1), detox and residential staff (N=2), a sober living house manager (N=1), and a prevention specialist (N=1).

Ethical Consideration

This study was approved by the University of California-San Diego Ethical Review Board. Participants provided verbal informed consent to ensure participants' anonymity, and researchers explained that they could withdraw from the study at any time and refuse to answer questions. Participants were given \$20 Amazon Gift Cards or two Black AMC Stub Cards, which are free movie tickets to a movie theater franchise.

Theoretical Framework

We applied the Exploration, Preparation, Implementation, and Sustainability (EPIS) Framework as our analytic lens. The EPIS framework is made up of four key phases (exploration, preparation, implementation, sustainment) that describe the implementation process, factors that exist in the outer context and the inner context, bridging factors that exist between the outer and inner contexts, and innovation factors such as the characteristics of the innovation/evidence-based practice being implemented.^{16,18,19}

The focus of this study was on the implementation phase of EPIS. In this phase, implementation is being monitored.¹⁸⁻²⁰ Any necessary problem-solving, such as adaptations or adjustments, is addressed.¹⁸⁻²⁰ The implementation phase also assesses if the organization and providers are adequately prepared for using the EBP.¹⁸⁻²⁰ Questions pertaining to the EPIS constructs were added to the interview guide to understand the implementation of MOUD and what adaptations or changes may have occurred at the macro and agency levels.

The inner and outer contexts were also considered. The outer context focuses on the external environment in relation to the organization, such as funding, inter-organizational relationships and networks, and characteristics of people receiving the EBP.^{16,18-20} The inner context in EPIS includes the organizations' characteristics and adopters' characteristics that may influence implementation. When implementing an EBP, organizations that can start with a good working knowledge of it and skills in the EBP are more likely to adopt it. The inner context focuses on the characteristics within an organization, such as leadership, training, and the structure of the organization.^{16,18-20} Innovation factors such as the fit of the EBP are assessed in the inner and outer contexts along with the characteristics of MOUD.^{16,18-20} Bridging factors consider the interconnectedness of the outer and inner contexts and how they influence the

implementation process.^{16,18-20} This study focused on the inner and outer contexts of the implementation of MOUD. Bridging factors were not parsed into separate themes; instead, the findings incorporated how the aspects of the inner and outer contexts were interconnected.

Interview Guide

A semi-structured interview guide was created to understand the implementation process for MOUD, focusing on how referrals are made, deciding eligibility for MOUD, reasons why referrals and uptake may have been unsuccessful, and factors to consider when getting someone on medication. For the last ten interviews, additional questions were added to the interview guide based on the EPIS framework constructs. These additional questions focused on what factors have impacted the referral of MOUD, barriers, and facilitators that occur when getting someone on MOUD, and things that are helpful in sustaining the use of MOUD.

Data Analysis

A situational analysis approach was used for the analysis of the data.²¹ Situational analysis is a highly iterative approach. The first eleven transcripts had already been completed when I joined the project. I became familiar with the data by reading the first eleven interviews and assigning codes and themes. In keeping with a grounded theory and situational analysis approach, the codes and themes were based on the data and the situation of implementation of MOUD and uptake of MOUD.^{21,22} However, in grounded theory the emphasis is on human action, while in situational analysis the emphasis is on the situation as the main unit of analysis.^{21,22} This is important as we are interested in the non-human elements that may be barriers or facilitators for MOUD uptake, along with looking at human elements. The additional ten interviews were read and coded while data collection was ongoing. During the overall

process, memo writing, and group consultation were used to discuss the themes that came up in the data in weekly meetings. Situational maps were created as the data was analyzed, with the focus being on the situation and looking at human and nonhuman elements of the situation.²¹ Following the situational analysis and the identification of the implementation of MOUD, the data underwent secondary coding using the EPIS framework. The findings of this secondary analysis focused on the EPIS framework constructs of the outer and inner contexts to understand the implementation of MOUD and the strategies and innovations that have been used to enhance the implementation and future sustainability of this evidence-based treatment

RESULTS

Participants (N=21) were mostly female (N=18) and Not Hispanic White (N=15). Further breakdown of gender and race can be seen in Table 3.1 and were based on NIH race/ethnicity and gender categories. Other demographics were not collected to protect the anonymity of participants.

Table 3.1: Participant Characteristics

Demographics	N(%)
Race	
Non-Hispanic White	15 (71.4%)
Non-Hispanic Black or African American	1 (4.8%)
Non-Hispanic Native Hawaiian or Other Pacific Islander	1 (4.8%)
Non-Hispanic Asian	1 (4.8%)
Hispanic White	1 (4.8%)
Hispanic Unknown Race	2 (9.5%)
Gender	
Woman	18 (85.7%)
Man	3 (14.3%)

An overview of the EPIS constructs, the inner and outer contexts, and the corresponding implementation elements can be seen in Table 3.2.

Table 3.2: EPIS Framework Constructs and Implementation Elements	
EPIS Construct	Implementation Elements
<i>Outer Context</i>	
	Service Environment and Policies
	Funding
	Funding for MOUD
	Funding for Patients' Needs
	Funding for Providers
	Inter-organizational Environment and Networks
	Patient/Client Characteristics
<i>Inner Context</i>	
	Leadership
	Training
	Organizational Characteristics
	Individual Characteristics of Adopters

Outer Context-Service Environment and Policies

The service environment focuses on the sociopolitical and economic contexts influencing implementation, such as policies, legislation, monitoring, and review. Healthcare was the sociopolitical context mentioned in all the interviews and how the monitoring and reviews of insurance affected the implementation of MOUD. One provider mentioned how insurance was a “huge sticking point” and talked about how insurance companies would have different criteria than the agency would use, making it challenging to justify MOUD treatment to an insurance company even though the agency deemed it as medically necessary. Substance use disorder treatment facilities are increasingly required to use the ASAM criteria, and multiple participants

(n=5) reported following this guideline. However, it was unclear if the insurance guidelines also followed these criteria.

Another provider discussed how “*each health plan has a different authorization process, and it requires different documentation,*” which becomes a time-consuming barrier as providers need to navigate insurance plans and ensure they are taking the proper steps for documentation rather than focusing on treating their patients.

Lastly, when it came to policies that impacted the ability to get patients on MOUD, the only policy participants could speak to was the X-waiver. The X-waiver was often seen as a barrier to getting people to prescribe MOUD due to the time it took to get it. When asked about the X-waiver, providers were happy they obtained it and felt the training was helpful, but also agreed that not requiring it could lessen the barrier of getting more people to prescribe MOUD.

Outer Context-Funding

Funding in the EPIS framework includes any financial support that is provided when implementation occurs and can target levels multiple levels of implementation, such as providing the evidence-based practice (EBP), paying for MOUD, paying for training, incentives, and anything else that can impact the implementation of the EBP.²⁰ Throughout every interview, funding and its impact on the implementation of MOUD was an omnipresent topic, often consisting of the majority of the content of interviews. Funding was related to being able to pay for MOUD and the surrounding efforts to implement MOUD and get it to clients, such as paying for transportation, training, and buying interviewees time to help with the implementation process. All interviewees mentioned ways of problem-solving how to get people on and keep them on MOUD. Often it was necessary for agencies to utilize multiple money streams and could not rely on just one pathway. The ten interviewees I interviewed were given the interview guide

with added questions for this dissertation and asked if they knew about funding streams or how much grant money was available to them. None of them knew how much they had left or for how long, suggesting that other people within the agency were focused on accessing funding streams. For this section, we separated funding into different sub-themes, including funding for MOUD, funding for patients' needs, and funding for providers.

Funding for MOUD-“Insurance is the biggest barrier in medicine today.”

Checking insurance was the first step in recommending someone for MOUD in all interviews to help reduce the extra cost that could come from accessing care patients didn't have coverage for. Only three of the participants dealt with clients with private insurance, and the rest dealt with Medi-Cal and county-funded clients. Interestingly, private insurance became a barrier to accessing MOUD as clients could not pay their co-pays, insurance companies wouldn't cover the medication, or the insurance companies would decide that they no longer needed to take it. Private insurance also blocked many people from accessing care at agencies working with MOUD due to the agencies not taking private health insurance, thus leading to out-of-pocket costs that patients couldn't afford.

A common sentiment that came up was that having Medi-Cal or county insurance was actually more beneficial. Most of the people interviewed (n=18) worked at agencies that took Medi-Cal or County insurance. Some providers mentioned that it was better to be on Medi-Cal as the costs were lower for medication and provided more options and continued care. Multiple providers discussed how they would encourage patients to switch their insurance to Medi-Cal, or a specific Medi-Cal provider, to help them access the clinic they were working at. This allowed the patients more continuity of care where they could access health care, mental health care, and MOUD treatment.

Grant funding was used to help supplement payback for the agencies and to reduce further barriers to patients. One specific grant that came up was the MAT Expansion grant which was a grant that certain agencies could apply for and receive funding to provide MAT services. Many facilities had specific grant funding for MOUD to help get clients on it and pay for prescriptions. One provider mentioned how a grant paid for everything MOUD related at their facility.

What I think has been the biggest thing with this grant is that we no longer have a financial reason or no one has a financial reason to not get in services and stay in services right now.

Grants were used to pay for medications, co-pays, treatment visits, and urine analyses required when getting on MOUD. One agency used grants to cover all SUD services because they were not billable through managed care plans. Many of them mentioned how the MAT expansion and MAT grant have helped reduce these barriers. Utilizing grants enabled agencies to work with the uninsured by covering costs until they could sign up for insurance, which the agencies usually helped with. This allowed patients to stay in care and not have to wait to be insured to receive it. Grants also helped people who would lose insurance coverage and covered them while they had a lapse in coverage. Grant funding was also used heavily in emergency rooms to help reach patients and get them on MOUD after leaving the emergency room.

Agencies also found other ways to work around funding and payment. One participant mentioned how when they had a higher paying census, such as those with high paying private insurance, it made it more flexible to give out free treatments to other patients. Using insurance plans and high reimbursement rates from one insurance plan made it more accessible to accept patients who had Medi-Cal, which historically has lower reimbursement rates. The same interviewee even mentioned how sometimes the agency would help people and pay for treatment

even if the agency couldn't afford it, understanding that getting people into treatment was more important to the agency than making a profit. One participant who worked at a for-profit agency that took private insurance and self-pay patients mentioned how the owner of their facility would pay for people's treatment and other costs out of their own pocket if necessary or use other scholarships from donations from past clients. However, one interviewee mentioned that needing to supplement insurance, find different forms of funding, or have agencies cover costs is not sustainable.

Because it's not sustainable either way. If they can't pay for it themselves out of pocket and we can't do that for them forever, then we need to find another solution.

Funding for Patients' Needs

Paying for treatment was the most significant barrier for patients when accessing MOUD, but the second biggest obstacle, according to interviewees, was transportation. Interviewees mentioned how their patients had difficulty getting to appointments and pharmacies due to their lack of reliable transportation. When starting MOUD, some agencies required multiple appointments and check-ins to ensure patients' success, but this was difficult for patients who were more transient or experiencing homelessness.

To help with transportation, some facilities used grant funding to pay for Lyfts or agency workers to drive patients to appointments. One interviewee mentioned that many patients do not know that transportation to appointments is an added benefit of some Medi-Cal and insurance plans. Educating patients on this benefit has reduced transportation as a barrier. One agency reported driving patients from their clinic to the pharmacy to get their medication, while others would drive patients to detox so that they would be able to start treatment. Agencies tried to limit any sort of patient-need barrier that would get in the way of them accessing MOUD.

Funding for Providers

Grants also helped reduce the barrier of finances for providers and helped create jobs that would not have existed without such funding. One agency used grant funding for MOUD and outreach work and saw how being able to dedicate time to outreach work helped get people into treatment and on MOUD. However, the grant had run out, and the interviewee no longer had the time to do such work due to the lack of funding, which slowed down how many people could get on MOUD.

A participant that was an ER doctor described how a grant the hospital had received paid for a substance use navigator, but that the funding is almost gone and could end the substance use navigator role. The participant expressed frustration over how this role had been successful and helped get patients on MOUD and into treatment outside of the ER. Without the substance use navigator, this role would be outsourced to social workers within the hospital who do not have as much time or knowledge of substance use treatment options.

Having grant funding helped providers allocate time to different needs, free up their time, and enable them to still receive money. One participant reported how getting a grant allowed her to take time off to talk to people and figure out the best way to run a MOUD program, along with making necessary changes to the clinic she worked at. Grant funding was used to help train staff, such as getting prescribers to get their X-waiver. Utilizing a cash incentive to train providers helped get one agency to go from having 3 providers to 40.

The biggest thing that was able to get me involved was there was funding available that I could take time away from clinical work and use that to buy down shifts to actually focus on these interventions, to do the education for our nurses and physicians, to teach them how to use this medication early on.

Outer Context- Interorganizational Environment and Networks

Within the outer context, the inter-organizational environment and networks cover working with other organizations in sharing knowledge of the EBP and creating shared implementation goals. When it came to finding ways to get patients on MOUD, participants would talk about the importance of relationships with other organizations and how they affected the ability of a patient to get on MOUD.

There was a theme of trying to get patients into care and the issues of referring them to other agencies. One provider talked about being uncomfortable referring patients to certain agencies due to the ethics they were run by and instead creating “tape and glue programs” to better serve patients. The provider spoke on how they disagreed with other programs that were more punitive rather than focusing on a harm reduction approach. Some interviewees mentioned how places that took Medi-Cal had long wait lists and strict guidelines, where “*if somebody messes up, even a little bit, they’re out*” and how this was “*not forgiving for the symptoms of this illness.*” However, this sentiment usually came from those who worked at agencies that did not accept Medi-Cal and were trying to get patients into treatment and was not shared with those who worked in Medi-Cal-funded agencies.

Some providers also expressed frustration with other agencies regarding patients on MOUD. One significant barrier to keeping patients on MOUD was if they were engaged in sober living. One participant worked in a sober living setting with stringent rules on where the medications could be kept. Workers observed patients taking the medications and required frequent urine analyses to ensure patients were taking the medication properly. A couple of providers would mention how they would have patients who would be doing well on MOUD but

would get into a sober living that did not allow such medications and were asked to wean off of it. This lack of inter-organizational shared goals reduces the impact of implementing MOUD.

Participants also talked about collaboration with other agencies and how this impacted access to MOUD. One provider mentioned how communication between outpatient and inpatient systems is a barrier and how sometimes patients at the inpatient level get referred to treatment but never make it to the outpatient level, whether it is due to personal barriers such as not having a phone or transportation. Multiple providers mentioned how social workers in the emergency rooms try to connect people to follow-up appointments for when they are discharged but getting people to attend these appointments was the most significant barrier. Inter-organizational networks are important in coordinating care. However, temporal elements such as the time between being in the ER and a follow-up appointment or getting someone into treatment when they want to go can be difficult in coordinating prompt and urgent care.

Partnerships with other agencies in the community were also commonly mentioned. Some agencies would partner with detox centers to send clients to help them start their MOUD. Others would partner with emergency departments to get them to refer patients to their clinics when patients came in looking for substance use disorder treatment.

We're trying to work all emergency rooms so when they get somebody that overdoses that they're going to refer them to us so we can start their--or at least continue their treatment until we can get them to their primary care.

Inter-organizational networking and collaboration could be easier if all agencies or projects were on the same data or electronic health systems. One provider mentioned how data systems are segregated due to different funding streams. Another provider said how collaboration is complex and called it "bureaucratic inertia." Another provider discussed how being able to share funding streams between organizations working on the same intervention or

outcome made it more difficult to reach patients due to some organizations not qualifying for some funding while others can.

For some providers, offering all services in-house rather than dealing with other agencies made access to care easier for patients and providers. Referring patients to substance use treatment within an agency was easier if patients were already enrolled in their agency for physical health or mental health care.

Having everything in one place is incredibly important because I think that a lot of the patients who are people that are suffering from addiction, might live in poverty, might have other complications from their addiction like homelessness, food security etc.

Outer Context-Patient/Client Characteristics

In previous research, reasons for not wanting to prescribe MOUD to patients from providers included diversion, patients being time-consuming, and not wanting to be inundated with patients. All participants had chosen to work with MOUD and patients with opioid use disorders and wanted to work with them. The two things participants looked for in treating patients were motivation and willingness to change. Participants mentioned that motivation was a barrier and that if they could not get into treatment when their motivation was high, they might lose that and not start MOUD. Participants mentioned timing was the most critical aspect of a patient due to motivation not being long-lasting, especially when starting to go through withdrawal.

As mentioned earlier, patient transportation was a barrier to getting treatment and making it to appointments. Rather than relying on patients to solve transportation issues, organizations would take on this task, whether it was through grant funding, benefits included with insurance, or having all aspects of treatment in-house. It was apparent that the participants' agencies were

trying to work with patient characteristics that could be potential barriers rather than putting the pressure of problem-solving on the patients themselves.

Inner Context-Leadership

Eight of our participants were responsible for helping implement MOUD and problem solving any issues that came up, usually having to deal with funding, patient access to MOUD, and reaching participants. A participant who worked in medical leadership mentioned how the DMC-ODS had brought in medical directors for substance use treatment, which was helpful in team building. Adding medical directors to leadership helped create a climate for implementation with someone who understood what MOUD was, what the evidence for it is, how it works, and how it could be integrated with what agencies were already doing. This was also a similar sentiment in participants who held leadership roles and found ways to reduce barriers in providers who were not prescribing, such as providing them with incentives to attend trainings or getting the X-waiver and educating their staff on the importance of MOUD.

Two participants at the same facility reported that they only started prescribing MOUD at the encouragement of the medical director at their facility. Both participants mentioned that they had not wanted to work with patients with a substance use disorder but that the medical director's encouragement and their trust in the leadership motivated them to get the X-waiver and prescribe MOUD. Having the medical director's support and being able to ask questions for guidance helped them feel more confident in prescribing.

I felt comfortable because being so new and being so cautious and overly conservative, I had [Medical Director] to talk to and to be my sounding board of what I was thinking, and he would say, "Yes, that's great. You're on track.

Inner Context-Training

Not having enough prescribers for MOUD and behavioral clinicians to help support people with an OUD was a common statement that came up. Participants reported instances of burnout and lack of staff in the substance use field. A commonly proposed way to expand this labor force was through training, especially for people in schools to help introduce them into the substance use treatment field.

Multiple participants reported how they had never considered working in the substance use field, didn't know about MOUD, and didn't plan on working with people who needed it, and that their first introduction to substance use disorders was when they were already working in the field, not when they were in school. Suggestions included making MOUD and substance use treatment part of routine education, especially for medical professionals. One participant who was a physician's assistant stated:

The newly licensed PAs right out of school are going to be very hesitant to step into this. I think with putting more education into the classrooms for the nurse practitioners maybe, definitely with the PAs, that when they come out of school and they get licensed, that they can understand that we do need more providers that will, and are willing to, provide these MAT type of options, because in every field that you can even think of that a PA will go in, they're going to be touched by addiction.

One provider mentioned how training could have its negative sides, especially when training is offered by people who do not want to work with OUD, or do not believe in the effectiveness of MOUD.

Think about the medical trainees who see the people in charge of them treating patients a certain way or being frustrated in these situations, and that's what they learn to model, that's their models. They don't even know that there's hope. They don't learn about that, and so we get to see it on the outpatient side, fortunately. I get to see longitudinally the different lives of the patients who are sober can lead and the tremendous impact that they have on the health and

community and how powerful they are in their own lives, and so I get to see what happens, and there's just no experience with that in provider education, so that's a huge, huge hole.

Another aspect of training included the X-waiver that is required for people to be able to prescribe MOUD. Some participants reported that obtaining the waiver was a barrier for some as it is time-consuming, often requiring an 8-hour course, and some providers were unwilling to pay for it or take time off to get the training. As mentioned previously, using grant funding to pay for these trainings and pay providers to take them helped reduce this as a barrier. Participants reported that taking the course and being appropriately trained on MOUD induction and dosing helped them become more confident in their prescribing abilities and felt that training was an important part of prescribing MOUD to ensure that it was being done appropriately. Current policy changes state that those prescribing MOUD to 30 people or less no longer need this training but eliminating the X-waiver would take federal action. Five participants explicitly expressed being in favor of getting rid of the waiver to reduce the barrier of getting providers to prescribe MOUD.

Inner Context-Organizational Characteristics

Another critical aspect of the organization's characteristics was structuring it so that certain people were delegated specific tasks. Getting someone on MOUD includes many steps, from the moment someone walks into the door until they can start their medication. A way to make this process run more smoothly was to have a multi-disciplinary team that worked together to treat a patient. These teams could include, but were not limited to, outreach workers, intake coordinators, medical providers, behavioral health clinicians, financial counselors, pharmacists, medical directors, program managers, clinical directors, and grant directors. Having a

multidisciplinary team made it easier for people to focus on the specializations of their jobs without having to perform multiple jobs.

Although pharmacies may not be part of an organization, they work closely with the organization to get patients on MOUD. Having a pharmacy in-house or close to an organization made it quicker and more accessible for patients to get their medication immediately. Creating partnerships with pharmacies was also crucial as multiple providers mentioned how knowing which pharmacies do not stock MOUD or want to carry helps them avoid sending patients there. By being able to communicate with pharmacies, providers were able to ensure that the medications would be available for patients to pick up and start right away. There is a necessary window in starting MOUD. Getting patients the medication on time is essential to getting them successfully started. Pharmacists were also praised for finding ways to lower the costs of medications and work on time-consuming prior authorizations.

Providers who worked in agencies that use behavioral health clinicians as the first stop for MOUD care also found that it helped with patient care. Behavioral health clinicians could get the necessary information about a patient, reducing the time a medical provider would have to meet with them and allowing more patients to be seen. When interviewing medical providers, they often mentioned how they only had about 15 minutes to meet with clients and get them started on a course of treatment. Having social workers in emergency departments who worked with getting people transitioned into care after leaving was important in ensuring continuity of care.

Inner Context-Individual Characteristics of Adopters

Individual characteristics of adopters in EPIS are key determinants in whether an innovation will be implemented and focus on the values and goals of the adopter, social

networks, and the perceived need for change. All participants in this study supported MOUD and using it as a treatment tool for opioid use disorders.

Some interviewees (n=4) mentioned hesitancy from other providers to provide MOUD, often citing lack of time, being overworked, not wanting to work with patients who have a substance use disorder, not wanting to work with “difficult” patients, and not agreeing with MOUD as a way to be sober. Participants we interviewed seemed to adopt a more harm reduction approach than abstinence-only and said their primary marker of success for treatment was if patients continued to take their medications and meet their goals. Participants reported the importance of being non-judgmental and encouraging people to come back. Participants all appeared to have a passion for being in this field, felt compassionate toward patients, and understood what patients might be going through.

Some participants mentioned how they saw a need for MOUD and to get it into the community more, which inspired them to act and find ways to make implementation possible. The most salient characteristics in participants who wanted to adopt MOUD were having a passion for the work and seeing the need for change in how the service was delivered. One participant recounted that before implementing MOUD into the emergency room, they were practicing “benign neglect,” but finding out about MOUD allowed them to treat patients instead. Benign, in this case, was trying to make patients comfortable while going through withdrawals but not actually addressing their substance use and treatment.

“We used to detox people with Clonidine and Librium, and we would pat ourselves on the back for it, and it didn’t do anything, but we felt we were being compassionate. Then when we actually found we could treat this rather than just help people detox, then it’s a game changer.”

Four providers mentioned how diversion was not something they worried about and that the perceived need for MOUD was more important than the perceived risk of diversion. One sentiment was that patients would not be willing to visit once a month to divert medication. Two participants reported that diversion could be beneficial as it would get someone else to try to MOUD who may not have tried it before and could motivate that person to come in for treatment. However, one participant mentioned that they would have patients who had been using MOUD on the street and not using it correctly, which would make them more hesitant to try MOUD again.

“If I can give someone buprenorphine and it’s, one, protecting against a possible overdose, because it occupies other opioid receptors; two, if they’re using it, they’re maintaining their tolerance while they’re on it. They may enjoy it and decide to come back or follow up with their doctor.”

DISCUSSION

Medications for opioid use disorder (MOUD) are the most effective treatment and preventive tool for opioid use disorders. Yet, they continue to be underutilized even with the enactment of federal initiatives and legislation designed to increase access to them.¹¹ Previous research has looked at the barriers and facilitators of accessing MOUD at the patient, provider, and system levels. In this qualitative study, we took a nuanced approach of using the implementation framework, the EPIS framework, to understand the implementation of MOUD and the problem-solving participants and their agencies took. We concentrated on how factors of the outer context, such as the service environment and policies, funding, inter-organizational environment and networks, and patient/client characteristics, along with aspects of the inner context such as leadership, training, the structure of the organization, and individual characteristics of adopters, all influenced the implementation of MOUD and made suggestions of how they can be strengthened to support MOUD implementation further.

Decreasing policy and regulatory barriers have the potential to increase MOUD access. During the COVID-19 pandemic, policy changes allowed more patients to take home methadone doses and found that this did not increase methadone-related overdoses, thus showing that stringent policies may not be necessary.²³ Within the service environment, the approach that impacted the prescribing of MOUD was the X-waiver. Participants discussed how obtaining this was often a barrier for providers to prescribe. Past research has found that providers are not prescribing to their full capacity.⁴ It is estimated that if all waived providers were prescribing to their full capacity, then over half of the people with an OUD would be treated.⁴

In 1996, France allowed all registered physicians to prescribe buprenorphine in an office-based setting without any additional education or licensing, which led to a ten-fold increase in the number of patients being treated and an 80% decrease in opioid overdose fatalities.^{24,25} Numerous studies have suggested that less stringent guidelines and regulations have led to more physicians prescribing MOUD.²⁶ If the U.S. wants to address the opioid epidemic effectively, it will need to make more efforts to reduce the barriers to prescribing MOUD and make access to it less restrictive.

The implementation of MOUD was hindered the most by funding, specifically insurance, and inability to afford the medication and treatment visits required. Participants found ways to work around funding issues, such as grant funding or agency funding, and would be creative in reducing patient costs. Our findings suggested that having Medi-Cal or county insurance made treatment more accessible and affordable for patients. In the specialty treatment system, Medicaid expansion and Medicaid coverage of medications have been found to influence the availability of MOUD.² In a national study of people who were on OUD versus those who weren't, insurance was the most critical factor in determining if someone was on MOUD, with

35% of people with public insurance receiving MOUD, 21% of those with private insurance receiving MOUD, and only 16.8% with no insurance receiving it.⁸ Public insurance was an enabling factor in driving MOUD use and was primarily driven by Medicaid.⁸ In addition, insured people continue to face barriers such as providers not accepting insurance. A study found that out of 100 marketplace health plans, not all covered all types of MOUD, with naltrexone being less covered than buprenorphine and injectable drugs being less covered than oral ones. In countries such as France, Italy, Germany, and Australia, patients have more access to buprenorphine due to having a universal healthcare system where they are not burdened by healthcare costs, which also allows more people to access treatment.²⁶ Having support from insurance companies to prescribe MOUD and cover costs may help access and sustain patients in treatment. Additionally, moving from the current U.S. health care system to one that is universal may also help expand access to MOUD.

The inter-organizational environment and networks were also crucial in getting people on MOUD, and our participants talked about working with other agencies to refer patients to care. Being able to provide bridge prescriptions in the emergency room for patients until they get into follow-up care has been mentioned by providers. Still, there is the possibility of loss to follow-up with patients. In a past study, over half of their sample had reported past emergency department visits, less than a third had received MOUD, while over 80% had a general health care encounter, showing that there are some gaps in care when it comes to recognizing clients that may benefit from MOUD.⁸ Continued efforts in getting organizations to work together and create warm hand-offs with patients from one organization to another would be beneficial in ensuring that they are maintained in care.

Lastly, leadership and training were key factors in getting providers to prescribe MOUD and get other professionals to recommend it. Our participants mentioned how they only pursued an X-waiver at the encouragement of leadership or after witnessing the need for it. In past studies, physicians were interested in being paired with a physician experienced in prescribing MOUD and having more courses in OUD, all of which would make them more willing and confident to prescribe.^{4,7} Physicians have cited a lack of knowledge of OUD as a barrier to prescribing and there being a lack of education in addiction medicine in medical school and residency.¹¹ In addition, previous research has found that physicians do not want to work with patients with an OUD due to perceiving them as “high maintenance,” “difficult,” and “unreasonably demanding.”⁷ However, studies had found that health professionals felt more positively toward people with substance use problems when they had more personal or work experiences with substance use.²⁷ These findings, coupled with ours, suggest that targeting early education for providers may be beneficial in increasing access to MOUD.

In the recent decade, medical schools didn’t cover substance use disorders. In the last five years, medical schools such as Stanford have launched additional medicine curriculums of up to five hours of coursework.²⁸ Education could also change attitudes and stigma of providers toward people with a substance use disorder, with them changing their perception of patients being challenging to work with and accepting them into their practice. Increasing the number of waived physicians won’t help the shortage of prescribers alone. Instead, encouraging physicians through additional resources, such as training and support, can help increase MOUD prescribing, which should start in school.⁴

The Opioid Workforce Act of 2021 is trying to address this issue by funding 1,000 Medicare-reimbursed residency positions focused on addiction medicine, addiction psychiatry,

or pain medicine.²⁹ The Association of American Medical Colleges (AAMC) projects a shortage of physicians by 2033. Although medical schools have expanded their class sizes, residency positions have not increased, primarily due to a cap on Medicare support for training.²⁹ This act could help increase the number of physicians being trained specifically for substance use disorder issues and fill the need for more physicians in specialty care. Educating future physicians, nurse practitioners, and physician assistants, amongst other professionals who can prescribe MOUD, can help increase the number of prescribers out there who can reach patients and feel confident in prescribing, along with reducing stigma toward patients.

LIMITATIONS

Our sample of people working in the substance use field with MOUD is characterized by people with a strong passion and motivation to work with patients with substance use disorders. As such, our findings in the experience of implementing MOUD may not be generalizable for all people who work with substance use disorders, especially providers who work in private clinics or primary care. This study is also limited by mainly interviewing people who work with county and Medi-Cal-funded clinics; however, we were able to interview some participants who only accepted self-pay or private insurance and found that they encountered similar implementation barriers. Lastly, another limitation is that EPIS-specific questions were added to the interview guide halfway through data collection, so only 10 participants were asked questions related to the EPIS framework. However, the interviews conducted with the first half of study participants were able to provide rich information related to the EPIS framework without explicitly being asked.

CONCLUSION

Past studies have concentrated on the barriers and facilitators in providers' attitudes toward prescribing MOUD, making providers a prime target for future interventions in increasing the implementation of MOUD. Future interventions should focus on how to improve the motivation and confidence of prescribers when it comes to prescribing MOUD. In addition, to help sustain MOUD in practice, implementation efforts could focus on strengthening education in the medical field to bring attention to substance use disorders to future providers before they enter the workforce. This is not limited to only medical doctors but should be included in education for those pursuing nursing, physician assistants, pharmacists, and other medical professionals who come in contact with patients who may have an OUD.

The necessity of insurance will always hover over MOUD and future medical interventions until the United States finds a way to increase reimbursement rates or create a healthcare system that is more accessible and affordable for all. Although our participants were able to find grants and other funding to help their patients, this may not be a sustainable practice and more efforts need to go into comparing how patients in countries with universal health care are able to access MOUD with patients in the U.S. If patients and providers do not have to concentrate on the barrier of insurance as much, then more efforts can be focused on reducing barriers to care such as transportation. MOUD is a successful treatment for opioid use disorders and overdose deaths and if we are going to end the Opioid Epidemic then we must further concentrate our efforts on implementing evidence-based practices that work.

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CHAPTER 4: CALIFORNIA SUBSTANCE USE DISORDER TREATMENT FACILITY CHARACTERISTICS ASSOCIATED WITH OFFERING MOUD

ABSTRACT

Background: The use of medication for opioid use disorders (MOUD) is not keeping up with the rise of the opioid epidemic. This study explored implementation factors related to substance use disorder treatment (SUDT) facilities in California offering MOUD.

Methods: Secondary analyses of the 2019 National Survey of Substance Abuse Treatment Services (N-SSATS) were conducted. California SUDT facilities were the focus of this study. Chi-square analyses were used to determine if there was a difference in facility type (private for-profit, private non-profit, and government-owned), what kind of funding they received, and if there were differences in being accredited and the funding facilities received. Multiple logistic regressions were used to examine if facility type, funding, and accreditation were related to offering MOUD.

Results: A total of 1,778 facilities in California were surveyed, with 43.7% being private for-profit, 44.8% being private non-profit, and 11.5% being government-owned. Of these facilities, 47.7% offered MOUD. Bivariate analyses showed significant differences in facility type and funding sources, with private for-profit facilities more likely to accept cash or self-payment, federal military insurance, and IHS/tribal/urban funds (all $p < .001$). Government-owned facilities were more likely to accept funding from the government, Medicaid, Medicare, and state-financed insurance (all $p < .001$). Bivariate analyses showed significant differences in being accredited and funding sources, with accreditation being related to accepting cash or self-payment, federal military insurance, and IHS/tribal/urban funds (all $p < .001$) and not being accredited was related to accepting funding from the government, Medicaid, and Medicare (all

$p < .001$). There was a statistically significant difference in being accredited and facility type ($X^2_{(2, 1776)} = 427.02, p < .001$), with private for-profit facilities being more likely to be accredited. Government-owned facilities had lower odds of offering MOUD (AOR: 0.33; 95% CI: 0.23, 0.47) than private for-profit facilities. Being accredited (AOR: 5.23; 95% CI: 3.97, 6.90), accepting private health insurance (AOR: 2.96; 95% CI: 2.10, 4.16), and accepting IHS/Tribal/Urban funds (AOR: 1.49; 95% CI: 1.05, 2.12) were related to having higher odds of offering MOUD. Facilities receiving government funding had lower odds of offering MOUD (AOR: 0.69; 95% CI: 0.48, 0.98).

Conclusion: MOUD is considered gold standards of treatment but are underutilized in Californian substance use facilities. Accreditation, funding type, and the type of facility are important implementation factors related to the delivery and sustainment of MOUD. Future policy implications may focus on ensuring that SUDT facilities are accredited to increase the use of MOUD. Further inspection of how insurance affects access to MOUD and how to improve access and availability of such treatments is warranted. Future policies could focus on requiring government funding to go toward delivering MOUD and ensuring that EBPs are being used in practice where government funding is received.

INTRODUCTION

The opioid epidemic in the United States is persistent, ever-changing, and becoming worse, with rates rising during the COVID-19 pandemic and the ever-increasing accessibility of fentanyl.¹ Overdose deaths increased by 31% from 2019 to 2020, and almost 75% of these deaths involved opioids.² One of the most effective evidence-based practices (EBP) for opioid use disorder (OUD) is medication for opioid use disorder (MOUD). Still, the utilization of these treatment options is not keeping up with the opioid epidemic. Implementing an EBP into general healthcare practice can take up to 17 years, and in the substance use field, the use of EBPs has not kept up with current research.³

The Food and Drug Administration (FDA) has approved MOUD for the treatment of OUD.⁴ MOUD have been included as a guideline for practice by the American Society of Addiction Medicine (ASAM) and are recognized as an International Standard for the Treatment of Drug Use Disorders by the World Health Organization.^{4,5} MOUD are considered the gold standard of care for treating OUD as they are the most effective EBP in reducing use, treating the disorder, and preventing overdoses.^{4,6} MOUD includes Buprenorphine, Naloxone, Buprenorphine plus Naloxone, Methadone, and Naltrexone.^{4,6} Although MOUD has the backing of both national and international entities, and there has been a concentrated effort to promote the availability of these medications, they continue to be underutilized and are not widely available in substance use disorder treatment (SUDT) settings.⁷⁻⁹ This study took an implementation science approach to understand the implementation factors related to offering MOUD in SUDT facilities in California.

Conceptual Framework

MOUD is an EBP that has been thoroughly studied and proven effective. However, the implementation of MOUD is still lagging.^{8,9} This study sought to understand factors related to SUDT facilities offering MOUD. This study is guided by the Exploration, Preparation, Implementation, Sustainability (EPIS) Framework, a conceptual model of factors influencing the implementation of EBPs.¹⁰⁻¹² EPIS comprises four phases (exploration, preparation, implementation, and sustainment) to define the implementation process in a dynamic way.¹⁰⁻¹² While the implementation phase speaks to the process of introducing new EBPs to SUDT facilities, the sustainment phase focuses on the context outside and within SUDT facilities that ensures EBP like MOUD, once implemented, continue to be delivered, with or without adaptations, practiced with fidelity, and have stable funding.¹⁰⁻¹³

We focus on two interconnected EPIS constructs that affect EBP sustainment, bridging factors (factors that are interrelated between the organization and the outer environment) and the outer context (the external environment in relation to an organization), to understand how these constructs influence the delivery of MOUD in SUDT. In this study, bridging factors reflect the type of organization that operates the facility, such as private for-profit, private non-profit, and government-owned, and if the facility is accredited.¹⁴ The outer context reflects SUDT facility funding sources, such as what insurance types they accept and if they receive government funding or grants.

The type of organization that owns a SUDT facility is a bridging factor that spans the organization and the outer context elements with the inner context elements, such as the characteristics of an organization being a SUDT facility, in implementation.¹⁰⁻¹² Many studies that look into implementing or using EBP in SUDT facilities focus on publicly funded or community-based organizations, which may be more inclined to use EBPs than privately owned

facilities because their funding requires more regulations.^{10,15} It is estimated that only 25% of community-based services provide EBPs, such as addiction medications, psychosocial therapies, or integrated services.¹⁶ Past research has found that only about 23% of publicly funded SUDT facilities offered MOUD.^{17,18} While privately owned SUDT facilities are more likely to offer MOUD, less than half had physicians who prescribed the medications.^{17,18} In addition, from 2002 to 2010, there was a 17.2 percent decrease in publicly owned SUDT facilities but a 19.1 percent increase in private, for-profit facilities, potentially contributing to disparities in access to treatment.¹⁸

When it comes to the adoption of MOUD in SUDT facilities, past studies have found that naltrexone, which was FDA approved in 1994, had adoption rates spanning from 14% to 44%, but that the most current estimate would be around 1 in 5 facilities.¹⁹ The adoption of naltrexone is lower in public non-profit centers compared to private for-profit or private non-profit facilities.¹⁹ Buprenorphine was FDA-approved in 2002, and in 2004 about 14% of facilities had adopted it, with rates being higher in private facilities than public ones.¹⁹ Organizational factors related to higher adoption of buprenorphine have been being for-profit, being accredited, offering detox, and using naltrexone.^{7,19,20} However, some studies have mixed results on whether being for-profit and having accreditation are significantly associated with the adoption of buprenorphine.^{19,21,22}

Accreditation is given by a regulatory authority and helps ensure quality control, consistency, and reliability of services.²³ Some accrediting agencies include the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) and the Commission on Accreditation of Rehabilitation Facilities (CARF).^{23,24} Accreditation is a way to assess a program and its quality for future clients, referrals, government agencies, and payers.^{23,25} Accreditation,

licensure, and credentialing can also help facilities obtain federal and state funding, such as using Medicaid and Medicare.²³ Privately owned facilities are more likely to have accreditation.^{23,26} Past studies have found that accreditation is related to having more resources and services.²³ In addition, in two different national studies using treatment data for 2017, accredited residential facilities were more likely to have MOUD.^{26,27} Accreditation has been recognized as a bridging factor as they often help link developers of programs or EBP with organizations that want to implement them.¹⁶ Accreditation can help link the inner and outer contexts during the implementation and sustainment phases of EPIS.¹⁴

The outer context elements consist of the funding the organization receives, such as the type of insurance or payment they accept and if they receive government funding. MOUD availability is associated with program funding, ownership, and insurance.²⁸ In January 2014, the Medicaid expansion of the Patient Protection and Affordable Care Act of 2010 (ACA) was implemented to help increase access to SUDT.²⁹ States, such as California, the state of interest in this study, that incorporated this expansion doubled the percentage of buprenorphine prescriptions that were Medicaid-paid. In addition, California has also been one of the only states that has implemented the Drug Medi-Cal Organized Delivery System (DMC-ODS), which was intended to make substance use treatment more accessible, evidence-based focused, and expand Medicaid care.³⁰ The DMC-ODS mandates that counties provide EBPs, such as MOUD services.³⁰ Counties participating in the DMC-ODS must cover access to Narcotic Treatment Program (NTP) services and NTP-licensed settings.³¹ The medications that must be available through NTPs under DMC-ODS include methadone, buprenorphine, naloxone, and disulfiram.³¹ Counties participating in the DMC-ODS can also provide MOUD beyond the required NTP services, such as long-acting injectable naltrexone.³¹ Medicaid expansions and coverage of

medications are found to increase the availability of MOUD.²⁸ This study will further fill this gap by seeing if accepting Medicaid is related to offering MOUD.

MOUD treatment is also related to insurance type. Private insurance is the most used source of payment for buprenorphine treatment.²⁹ However, a national study found that insurance was the most critical factor in predicting if someone was on MOUD, but found that those with public insurance were more likely to receive MOUD (35%) than those with private insurance (21%) or no insurance (16%).³² In addition, public insurance was an enabling factor in receiving MOUD.³² This study will help close the gap in understanding what funding is essential in the sustainment of MOUDs in SUDT.

The EPIS Framework guided this study to highlight the implementation factors of the sustainment of MOUD in SUDT facilities in California by looking at outer contexts and bridging factors and how they are related to offering MOUD. As seen in previous studies, we hypothesized that the bridging factors contributing to being more likely to offer MOUD would be if the organization was a private for-profit facility and had accreditation. With the impact of the DMC-ODS in California and mixed research on Medicaid being associated with MOUD use, we hypothesized that the outer context elements associated with facilities offering MOUD would be if they were receiving government funding. Lastly, we hypothesized that accepted private health insurance would be associated with being more likely to offer MOUD.

METHODS

Recruitment and Data Collection

This study used data from the 2019 National Survey of Substance Abuse Treatment Services (N-SSATS).³³ The N-SSATS is an annual survey of U.S. SUDT facilities and is

nationally representative. Data were collected between March and December 2019 from all substance use facilities in the United States.³³ Facilities were chosen from the active SAMHSA's I-BHA and included facilities that were added by state substance abuse agencies.³³ For the 2019 N-SSATS, facilities not included in the survey were halfway houses that did not provide substance use treatment, facilities that turned out to be solo practitioners, and jails, prisons, or other organizations that exclusively served people who are incarcerated.³³ There are 17,808 treatment facilities across the U.S. eligible for this study, with 15,961 responding.³³ For this study, substance use facilities that exist in California were the only organizations included in the analysis. Of the 15,961 who responded to the survey, 1,797 were from California.³³ The 2019 N-SSATS did not provide information on which or how many facilities did not respond.

2019 N-SSATS data was collected through a secure web-based questionnaire, paper questionnaires sent by mail, and telephone interviews.³³ Three weeks after the initial data collection was sent, a reminder was also sent to facilities, and after nine weeks, all facilities that hadn't responded were sent another questionnaire packet. The facilities were called one week after the second packet was sent, and a third packet was mailed nine weeks later if there was still no response. Facilities that had not filled out the questionnaire by June 7, 2019, were called and asked to complete the questionnaire through a computer-assisted telephone interview (CATI).³³ Quality assurance was sought by checking questionnaires for consistency and missing data and contacting facilities to obtain missing data. The item-response rate for the 2019 N-SSATS averaged about 99%.³³

Outcome Variable

To assess if facilities offered MOUD, a MOUD variable was constructed and will be called Offering MOUD. The following medications were included: Methadone, Naltrexone (oral), Naltrexone (extended-release, injectable), buprenorphine with naloxone, buprenorphine without naloxone, buprenorphine sub-dermal implant, buprenorphine (extended-release, injectable). The variable is dichotomous, yes if they have any one of the MOUD, and no if they have none.

Independent Variables

The assessed independent variables were chosen by the EPIS constructs of bridging factors and outer context construct. Bridging variables consisted of the organization that operates the facility, a mutually exclusive categorical variable consisting of private for-profit organization; private non-profit organization; state ; local, county, or community government; tribal government; federal government. For this study, this variable was then recoded by combing all government-run entities. Therefore, the facilities were categorized as private for-profit, private non-profit, or government-owned. In addition, whether the facility is licensed, certified, or accredited to provide substance abuse services (yes, no) was also a bridging factor variable.

The main outer context construct examined was funding. This was categorized by the types of payment the organization received and if they received funding or grants from the federal government, or state, county, or local governments. The types of payment were not mutually exclusive and categorized (yes, no) as to whether facilities accepted (i) cash or self-payment, (ii) private health insurance, (iii) Medicaid payments, (iv) Medicare payments, (v) state-financed health insurance, (vi) federal military insurance, and (vii) IHS/Tribal/Urban funds. Facilities were also asked in one question if they received funding or grants from the federal

government, state, county, or local governments to support their substance use program (yes, no), and will be referred to as received funding from the government. This was one variable and was not parsed out into different government funding streams.

Missing Data

Missing data was assessed for all variables of interest. Seventy-eight facilities (4.3%) were missing data for whether they received funding from federal government to support its substance use treatment programs. Six facilities were missing data on whether they were accredited. No facilities were missing data pertaining to the MOUD variable or on the variable of what organization operates the facility. Nineteen facilities were missing answers to the seven variables related to funding and insurance. To determine if the data was missing at random, chi-square analyses were done on the variables with missing data to see if there was a statistically significant difference ($p < .05$) in how these questions were answered by what organization operates the facility and if the facility offers MOUD. First, the variables with missing values were recoded into new variables where 1=missing data and 0=not missing data. The missing values for receiving funding from the government and being accredited were missing at random with $p > .05$. For the seven variables related to funding, the data was found to be missing not at random with a statistically significant difference in facilities that were missing data and those that weren't, as the missing data was from the same 19 facilities. These facilities were majority private non-profit and did not offer MOUD. The overall percentage of missingness for the funding variables was 1.1% due to the 19 facilities missing data. Past research has suggested that less than 5% of missing data is inconsequential and therefore these 19 facilities were excluded from the analysis.^{34,35} A sensitivity analysis was also completed by doing the logistic regression

analyses with the 19 facilities included and then without them included. There was no discernable difference between the outcomes and thus the facilities were kept out.

Data Analysis

Statistical analyses were conducted in SPSS Version 28.³⁶ Descriptive statistics were run on all variables. Multicollinearity diagnostics were run for all independent variables by looking at correlations of the variables, with variables having a correlation coefficient of 0.80 not being maintained.³⁷ None of the variables were correlated over 0.80. Multicollinearity was also tested using the variance inflation factor (VIF).³⁷ If the VIF was over 5, then the variable was not used. None of the variables had a VIF over 2.5.³⁷

Chi-Square analyses were conducted to see if there was a statistically significant difference in funding accepted by organization type. Accreditation by organization type was also assessed to see if there was a difference. Chi-square analyses were also used to assess if there was a relationship between funding accepted and facilities being accredited. Post-hoc tests were conducted on significant results to see which facility was significant. This was done by looking at the adjusted residual and using the Bonferroni Correction method to adjust for Type 1 errors, with the alpha being set at .0167.

For the logistic regressions, simple logistic regressions were run first for each predictor variable and if they offered MOUD. The predictor variables included the organization that runs the facility, accepted payment types, if the facility receives funding or grants from the federal government, and if the facility is accredited. An alpha level of $p < .05$ was deemed significant. Multiple logistic regressions were performed on the outcome variables, looking at both unadjusted and adjusted regressions, to look at odds ratios associated with SUDT facility characteristics that predicted whether the facility offered MOUD. All variables were used in the

multiple logistic regression as they pertained to the EPIS framework and to understand the outer contexts and bridging factors that may influence the use and sustainment of MOUD.

RESULTS

Table 4.1: Descriptive Statistics of MOUD Offered

	Private for-profit org 777 (43.7%)	Private non-profit org 796 (44.8%)	Government Owned 205 (11.5%)	
Medically Assisted Treatment Type				N(%)
Methadone	146 (18.8%)	48 (6.0%)	15 (7.2%)	209 (11.8%)
Buprenorphine	392 (50.5%)	102 (12.8%)	32 (15.6%)	526 (29.6%)
Buprenorphine with naloxone	502 (64.6%)	163 (20.5%)	52 (25.4%)	717 (40.3%)
Buprenorphine Sub-dermal implant	90 (11.6%)	20 (2.5%)	2 (1.0%)	112 (6.3%)
Buprenorphine (extended-release, injectable)	196 (25.2%)	32 (4.0%)	10 (4.9%)	238 (13.4%)
Naltrexone (oral)	464 (59.7%)	125 (15.7%)	55 (26.8%)	644 (36.2%)
Naltrexone (extended-release injectable)	403 (51.9%)	124 (15.6%)	51 (24.9%)	578 (32.5%)
MOUD Offered at Facility	585 (75.3%)	198 (24.9%)	65 (31.7%)	848 (47.7%)

Table 4.1 shows the different types of MOUD offered. The MOUD offered the most were Buprenorphine with naloxone, Naloxone (oral), and Naloxone (injectable). Overall, 47.7% of facilities were found to offer any sort of MOUD, with 75.3% of private for-profit facilities offering MOUD. When it came to ownership type, 24.9% of private non-profit facilities offered MOUD, and 31.7% of government-owned facilities offering MOUD.

Table 4.2: Descriptive Statistics of Independent Variables	
Bridging Factor Variables	n (%)
Organization that Operates the Facility	
Private For-Profit	777 (43.7%)
Private Non-Profit	796 (44.8%)
Government Owned	205 (11.5%)
Facility is licensed, certified, or accredited to provide substance use services	
Yes	963 (54.2%)
No	813 (45.8%)
Outer Context Variables	n (%)
Cash or self-payment	
Yes	1511 (85.0%)
No	267 (15.0%)
Private health insurance	
Yes	1130 (63.6%)
No	648 (36.4%)
Medicaid	
Yes	685 (38.5%)
No	1093 (61.5%)

Table 4.2: Descriptive Statistics of Independent Variables (continued)

Outer Context Variables (continued)	n (%)
Medicare	
Yes	362 (20.4%)
No	1416 (79.6%)
State-financed health insurance plan other than Medicaid	
Yes	432 (24.3%)
No	1346 (75.7%)
Federal military insurance	
Yes	391 (22.0%)
No	1387 (78.0%)
IHS/Tribal/Urban funds	
Yes	291 (16.4%)
No	1487 (83.6%)
Facility receives funding from the government	
Yes	782 (45.9%)
No	922 (53.7%)

A total of 1,778 facilities from California were included in the 2019 N-SSATS data. The breakdown of the organization that operates the facility can be seen in Table 4.2. When looking at ownership type, 43.7% of facilities were private for-profit organizations, 44.8% were private non-profit organizations, and 11.5% were government owned. More than half (54.2%) of facilities were accredited. The most accepted payment types were cash or self-pay (85.0%), and private insurance (63.6%). Only 38.5% of SUDT facilities accepted Medicaid, and all other insurances were accepted at 16%-25% of facilities. In total, 45.9% (N=782) of California

facilities receive funding from the governments to support their substance use treatment programs.

Table 4.3: Type of Funding Source Accepted by Type of Operating Organization				
Accepted Funding	Private for-profit org	Private non-profit org	Government	Chi-Square (p-value)
Facility receives funding from the government	57 (7.5%)	542 (72.3%)	183 (92.4%)	830.58 (<.001)
Cash or self-payment	759 (97.7%)	623 (78.3%)	129 (62.9%)	204.49 (<.001)
Private health insurance	713 (91.8%)	328 (41.2%)	89 (43.4%)	474.47 (<.001)
Medicaid	128 (16.5%)	424 (53.3%)	133 (64.9%)	292.68 (<.001)
Medicare	59 (7.6%)	220 (27.6%)	83 (40.5%)	155.33 (<.001)
State-financed health insurance plan other than Medicaid	123 (15.8%)	227 (28.5%)	82 (40.0%)	65.48 (<.001)
Federal military insurance	263 (33.8%)	83 (10.4%)	45 (22.0%)	125.73 (<.001)
IHS/Tribal/Urban funds	171 (22.0%)	91 (11.4%)	29 (14.1%)	32.96 (<.001)
Facility is licensed, certified, or accredited to provide substance use services	633 (81.6%)	286 (35.4%)	50 (24.0%)	424.71 (<.001)

Table 4.3 presents the percentage of facilities that accepted funding types and the chi-square results of the relationships between funding types and the organization that operates the facility. Receiving funding from the government was statistically significant in association with

the organization that operates the facility ($X^2_{(2, 1704)} = 838.04, p < .001$). Most facilities that are government-owned receive funding from the government (92.4%). Only 57 (7.5%) private for-profit facilities received government funding.

There was a statistically significant difference in accepting accept cash or self-payment ($X^2_{(2, 1778)} = 204.49, p < .001$). In terms of directionality, there seems to be an association between the operating organization and accepted funding, as a significantly higher percentage of private for-profit facilities (97.7%) accepted cash or self-payment, relative to private non-profit (78.3%), and government-owned facilities (62.9%). There was also a statistically significant difference in accepting private health insurance ($X^2_{(2, 1778)} = 474.47, p < .001$), with a higher percentage of private for-profit facilities (91.8%) accepting it compared to private non-profit (41.2%) and government-owned facilities (43.4%). A statistically significant difference existed in accepting military insurance ($X^2_{(2, 1778)} = 125.73, p < .001$), with a higher percentage of private for-profit facilities (33.8%) accepting it compared to private non-profit (10.4%) and government-owned facilities (22.0%). There was a statistically significant difference in accepting tribal insurance ($X^2_{(2, 1778)} = 32.96, p < .001$), with a higher percentage of private for-profit facilities (22.0%) accepting it compared to private non-profit (11.4%) and government-owned facilities (14.1%). Additionally, there was a statistically significant difference in being accredited and facility type ($X^2_{(2, 1776)} = 427.02, p < .001$), with a higher percentage of for-profit facilities (81.7%) being accredited compared to 35.4% of private non-profit and 23.4% government-owned facilities.

There was a statistically significant association in accepting Medicaid ($X^2_{(2, 1778)} = 292.68, p < .001$), Medicare ($X^2_{(2, 1778)} = 155.33, p < .001$), and other state-financed insurance ($X^2_{(2, 1778)} = 65.48, p < .001$) and operating organization type. A higher percentage of government-owned facilities (64.9%) accepted Medicaid, relative to private for-profit facilities (16.5%) and private non-profit

facilities (53.3%). Government-owned facilities (40.5%) also accepted Medicare at a higher rate compared to private for-profit facilities (7.6%) and private non-profit facilities (28.5%). Lastly, government-owned facilities (40.0%) accepted other state-financed insurances at a higher rate than private for-profit facilities (15.8%) and private non-profit facilities (28.5%).

Table 4.4: Type of Funding Source Accepted by Accreditation			
Accepted Funding	Not Accredited	Accredited	Chi-Square (p-value)
Facility receives funding from the government	517 (66.1%)	265 (33.9%)	254.39 (<.001)
Cash or self-payment	630 (77.5%)	879 (91.3%)	65.59 (<.001)
Private health insurance	288 (35.4%)	841(87.3%)	512.88 (<.001)
Medicaid	378 (46.5%)	307 (31.9%)	39.74 (<.001)
Medicare	226 (27.8%)	136 (14.1%)	50.81 (<.001)
State-financed health insurance plan other than Medicaid	219 (26.9%)	213 (22.1%)	5.56 (.018)
Federal military insurance	81 (10.0%)	310 (32.2%)	126.86 (<.001)
IHS/Tribal/Urban funds	97 (11.9%)	194 (20.1%)	21.71 (<.001)

Table 4.4 presents the percentage of if the organization has accreditation or not and what funding they receive along with the chi-square results of the relationships. Facilities that were accredited were more likely to accept cash or self-payment ($X^2_{(2, 1776)} 65.59, p<.001$), private health insurance ($X^2_{(2, 1776)} 512.88, p<.001$), federal military insurance ($X^2_{(2, 1776)} 126.86, p<.001$), and IHS/Tribal/Urban funds ($X^2_{(2, 1776)} 21.71, p<.001$). Facilities that were not accredited were more likely to receive funding from the government ($X^2_{(2, 1702)} 254.39, p<.001$), Medicaid ($X^2_{(2, 1776)} 39.74, p<.001$), and Medicare ($X^2_{(2, 1776)} 50.81, p<.001$).

Table 4.5: Unadjusted and Adjusted Multiple Logistic Regressions of SUDT Facility Characteristics Associated With Offering MOUD

	MOUD Offered			
	Unadjusted Odds Ratio		Adjusted Odds Ratio	
	Odds Ratio	Confidence Interval	Odds Ratio	Confidence Interval
Organization that operates the facility				
Private for-profit org	(Ref)		(Ref)	
Private non-profit org	0.11**	0.09, 0.14	0.67	0.40, 1.12
Government Owned	0.15**	0.11, 0.21	0.33**	0.23, 0.47
Facility is accredited to provide substance abuse services	11.60**	9.23, 14.53	5.23**	3.97, 6.90
Accepted Payment Types				
Cash or self-payment	3.05**	2.28, 4.10	0.84	0.56, 1.27
Private health insurance	11.63**	9.05, 14.93	2.96**	2.10, 4.16
Medicaid	0.49**	0.40, 0.59	1.07	0.79, 1.45
Medicare	0.61**	0.48, 0.78	1.17	0.82, 1.65
State-financed health insurance	0.91	.073, 1.13	1.02	0.75, 1.41
Federal military insurance	4.00**	3.12, 5.12	1.28	0.93, 1.76
IHS/Tribal/Urban funds	2.55**	1.96, 3.32	1.49*	1.05, 2.12
Facility receives funding from the government	0.19**	0.16, 0.24	0.69*	0.48, 0.98

*Significant at <.05

*Significant at <.001

Table 4.5 shows the results of the unadjusted and adjusted results of logistic regressions of the organization that operates the facility, accepted payment types, if the facility receives funding from the government, if they have accreditation, and if they are associated with whether the facilities offer MOUD.

The results in Table 4.5 show that in the adjusted analysis, government-owned facilities (AOR: 0.33; 95% CI: 0.23, 0.47) had lower odds of offering MOUD when compared to private for-profit organizations, meaning that private for-profit facilities are about three times more likely to offer MOUD than those that are government-owned. Private non-profit organizations had lower odds of offering MOUD (OR: 0.11; 95% CI: 0.09, 0.14) compared to private for-profit organizations in the bivariate logistic regression, but this was no longer significant in the adjusted model (AOR: 0.67; 95% CI: 0.40, 1.12). Facilities that had accreditations were over 5 times more likely to offer MOUD than those that were not (AOR: 5.23; 95% CI: 3.97, 6.90)

Facilities that accepted private health insurance were almost 3 times more likely to offer MOUD (AOR: 2.96; 95% CI: 2.10, 4.16) and facilities that accept IHS/Tribal/Urban funds were almost 1.5 times more likely to offer MOUD (AOR: 1.49; 95% CI: 1.05, 2.12). Facilities receiving funding from the government to support their substance use program showed lower odds of offering MOUD (AOR: 0.69; 95% CI: 0.48, 0.98), or facilities that don't receive funding from the government are 1.45 times more likely to offer MOUD. In the bivariate logistic regression, accepting Medicaid was associated with lower odds of offering MOUD (OR: 0.49; 95% CI: 0.40, 0.59), but this relationship was no longer significant in the adjusted model (AOR: 1.07; 95% CI: 0.79, 1.45).

DISCUSSION

Guided by the EPIS Framework, this study aimed to examine the implementation factors related to the sustainment of MOUD in SUDT facilities in California. Less than half (47.4%) of Californian facilities offered any MOUD in 2019. Study results identified important bridging factors related to sustaining MOUD implementation in SUDT. Specifically, as a bridging factor, having accreditation was associated with being five times more likely to offer MOUD. The type of organization that operates a facility was also an important bridging factor. When compared to private for-profit organizations, government-owned organizations are less likely to offer MOUD. Regarding the outer context element of funding, facilities that accepted private health insurance and IHS/Tribal/Urban funds were more likely to offer MOUD. Facilities receiving grant money were less likely to offer MOUD, which was the opposite of what we hypothesized.

To our knowledge, this is one of the first studies to use the EPIS Framework in assessing the delivery and sustainment of MOUD in SUDT facilities in California. In addition, this study paid particular attention to bridging factors that may relate to sustainment, which are often left out in implementation studies.¹⁴ The bridging factors of importance in this study were what organization operates the facility and facilities having accreditation. These factors bridged the inner context of being a SUDT facility and the outer contexts of funding that facilities accepted. Our findings suggest that these bridging factors can connect or disconnect facilities from the outer context of funding, such as how the organization that operates the facility or accreditation is connected to funding sources and how these factors help or hurt the implementation and sustainment of EBPs.³⁸ For example, private for-profit, and accredited facilities were more likely to accept private and tribal insurance, and both insurance types had higher odds of offering MOUD. These bridging factors could be better utilized to bolster the delivery and sustainment of

MOUD, such as making accreditation more accessible for all facilities or encouraging facilities to accept different insurance types.

Accredited facilities were over five times more likely to offer MOUD than those that were not, which aligns with past research.^{18,24,26,27,39} Facilities that are accredited have been found to sustain the use of MOUD longer than those that aren't.³⁹ It is pertinent to understand why accreditation is related to the higher use of MOUD and what aspects of accreditation contribute to this. Implementation of MOUD may be higher in accredited facilities as they are part of a social network of other SUDT facilities that creates pressure and accountability to use up-to-date EBPs.²⁴ This offers a policy implication in that increasing and promoting accreditation standards in SUDT could increase MOUD implementation.²⁶ However, accreditation is costly and may not be viable for public organizations that operate within a smaller budget.⁴⁰ Future policies could focus on making accreditation more accessible for government-owned organizations by offering financial incentives. Accrediting bodies that focus on government-owned facilities could also be monitored more to ensure that their priorities and requirements are similar to accrediting bodies that focus on private for-profit and non-profit facilities.

In addition, there is mixed evidence of whether accreditation creates better care. Accredited facilities have scored lower on patient experience ratings, suggesting that accreditation might focus on more organizational things, like documentation, versus patient outcomes.⁴⁰ EBP are meant to better patient outcomes and if accrediting bodies are not assessing outcomes appropriately and patient experiences are rated low, then it could be that facilities say they have certain EBP but are not practicing them properly or if at all. Also, accreditation is meant to assess the quality control of services, and the standards these entities use are not widely

available.^{23,41} SUDT facilities with accreditation have been found to offer admission to potential patients without doing a complete clinical evaluation.⁴¹ If accreditation becomes the standard for SUDT, further quality control of what these accrediting bodies are assessing will need to be more transparent, such as ensuring that MOUD is being offered in facilities and actually being utilized to better patient outcomes and health to better sustain the use of MOUD.

As this study found, SUDT programs that are privately owned are more likely to hold accreditation, both of which are related to a higher quality of care and can further disadvantage those who do not have the means to access treatment.²³ In recent years, there has been an increase in private for-profit facilities and a decrease in publicly owned ones.¹⁸ For-profit programs can be costly, with some asking for over \$17,000 to be admitted into treatment, which is higher than the average person with an opioid use disorder can afford.⁴¹ Furthermore, private for-profit, compared to government-owned facilities, and accredited facilities are more likely to offer MOUD. This could be because for-profit facilities have more financial means to be innovative and adopt new practices.²⁴ In addition, to keep up with treatment costs, for-profit agencies might have to keep up with EBPs and treatment options to entice patients to come to services.²⁴ Although facilities with accreditation and ones that are private for-profit offer more MOUD, past research has found that only a small percentage of patients who enter treatment with an opioid use disorder receive any medications in facilities that provide it.⁴²

Therefore, there may be a discrepancy between facilities offering MOUD and patients receiving it. Further research can focus on the relationship between offering MOUD and providing it to patients. The EPIS Framework considers the outer context of the characteristics of those receiving an EBP, along with innovation factors of how well the EBP fits with them and how these are related to the implementation and sustainment of EBPs. It could be that facilities,

such as private for-profit and accredited ones, offer more MOUD, but patients cannot access it due to other circumstances, such as finances, their attitudes toward MOUD, or the insurance they have.

California SUDT facilities primarily consist of private for-profit and non-profit organizations, with over 60 percent accepting private insurance and less than 40 percent accepting Medicaid. Facilities taking private insurance were more likely to offer MOUD. The number of facilities accepting Medicaid is low (38.5%), considering California has the most extensive Medicaid program in the United States.⁴³ Contradictory to our findings, Medicaid expansions, and coverage of medications have been found to increase the availability of MOUD.²⁸ With California participating in these Medicaid expansions and having the largest Medicaid program, we expected to see Medicaid as an implementation factor related to offering MOUD, which was not the case. In past studies, insurance was the most crucial element in being on MOUD, with people on public insurance being more likely to be on MOUD than those with private insurance.³² This could be due to Medicaid programs often requiring prior authorization for medications, which is associated with lower odds of offering medications.²⁸ It could also be that more for-profit facilities offer MOUD, but that MOUD is more accessible to those with public insurance. This disconnect could not be assessed with this data as we could not see the percentage of patients who received MOUD who needed it. If Medicaid is an enabling factor in being on MOUD, then further policy changes could focus on encouraging SUDT facilities to take Medicaid, whether by increasing reimbursement rates or offering other incentives to accept this insurance type. Additionally, future research could compare private and government-owned SUDT facilities and if their offering MOUD was related to patients' access and utilization of it. Furthermore, the United States could gear towards adopting a universal healthcare approach.

Other countries that have universal healthcare, such as France, Italy, Germany, and Australia, are not burdened by healthcare costs or bureaucracies, allowing people to better access treatment.⁴⁴

Lastly, government funding is a factor that facilitates the implementation of certain EBPs.¹⁵ This study highlighted that facilities that receive grants or funding from the federal government, or state, county, or local governments to support their substance use treatment programs were less likely to offer MOUD than those that do not. Most government-owned facilities received government funding. If the organization that operates a facility is a bridging factor between the outer and inner contexts, then this suggests that funding is related to the type of facility and can affect the kind of EBP that are being offered. Since bridging factors and the inner and outer contexts can work bidirectionally, future research could focus on how types of funding and the organization that receives this funding can work together to ensure that MOUD is implemented and sustained at a higher rate. Government funding and being a government-operated facilitated are associated with lower odds of offering MOUD, and government-owned facilities have higher rates of receiving government funding. Therefore, future policies could focus on requiring government-owned agencies to use more EBP and have accreditation that ensures EBP are being used. There could be changes in government funding that provide funding to facilities if they use MOUD, which may help increase the availability of MOUD in SUDT facilities.

LIMITATIONS

This study is not without some limitations. First, due to this being a secondary analysis, I was limited by the data that was included, such as not knowing what counties facilities are located. Future studies may want to break down counties that use the DMC-ODS and how they compare to counties that do not utilize it, especially regarding MOUD. The data set consisted of

only substance use treatment facilities, leaving out solo practitioners, primary care physicians, or other service providers who may provide MOUD to their patients. This means other entities may provide SUDT that do not fall under the SUDT facilities umbrella of the study, and more options may be available for people who want MOUD.

The N-SSATs do not mention how many doctors can prescribe medications or are available at the facilities. With N-SSATS being a national survey with already established questions, we could not see how many providers in each facility may be DATA 2000 waived, be willing to provide MOUD, or if there were any providers on site. These questions will need to be asked in future studies to continue to see where the disparities lie in being able to offer MOUD to clients.

CONCLUSION

To my knowledge, this is the first study to use the EPIS framework to understand implementation factors that are associated with the use and sustainment of MOUD. Opioid use disorders continue to be prevalent, and the rates of which are not slowing down. To better meet the needs of people with substance use disorders, implementation efforts must be concentrated on evidence-based practices, especially medication-assisted therapies. These efforts may focus more on how to effectively incorporate accreditation and the organization that operates the facility with offering MOUD. In addition, making accreditation more accessible and affordable for all facilities may help increase the use of MOUD and encourage SUDT to keep up to date with EBP. Increasing the rates of reimbursement rates and acceptance by insurance companies, especially Medicaid, for MOUD is imperative in helping sustain the use of MOUD in people with opioid use disorders. Future studies could concentrate on how policies like the DMC-ODS and Medicaid expansion are increasing the accessibility of MOUD and clarifying if Medicaid is

an enabling factor of being on MOUD. Lastly, future policy changes can focus on the push for utilizing MOUD as an EBP for treating opioid use disorders and encouraging their use in SUDT facilities.

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CHAPTER 5: DISCUSSION

OVERVIEW

This dissertation sought to illuminate the implementation factors that may be barriers or facilitators when implementing EBP, specifically for medication-assisted treatment for opioid use disorders (MOUD). The aims were to: (1) explore how attitudes domains are associated with the frequency of use of EBP in California-based providers (N=101) in the substance use field (2) explore Southern California substance use providers' (N=21) perceptions of the barriers/facilitators of implementing MOUD, and (3) examine what factors in substance use disorder treatment facilities in California, such as ownership of a facility (private for-profit, private non-profit, and government-owned), accreditation, and funding (insurance type, government funding), relate to offering MOUD. This research utilized an implementation science approach to fill in research gaps pertaining to what implementation factors may 1) affect the use of EBPs in substance use disorder treatment (SUDT) and 2) contribute to the research-to-practice implementation gap.

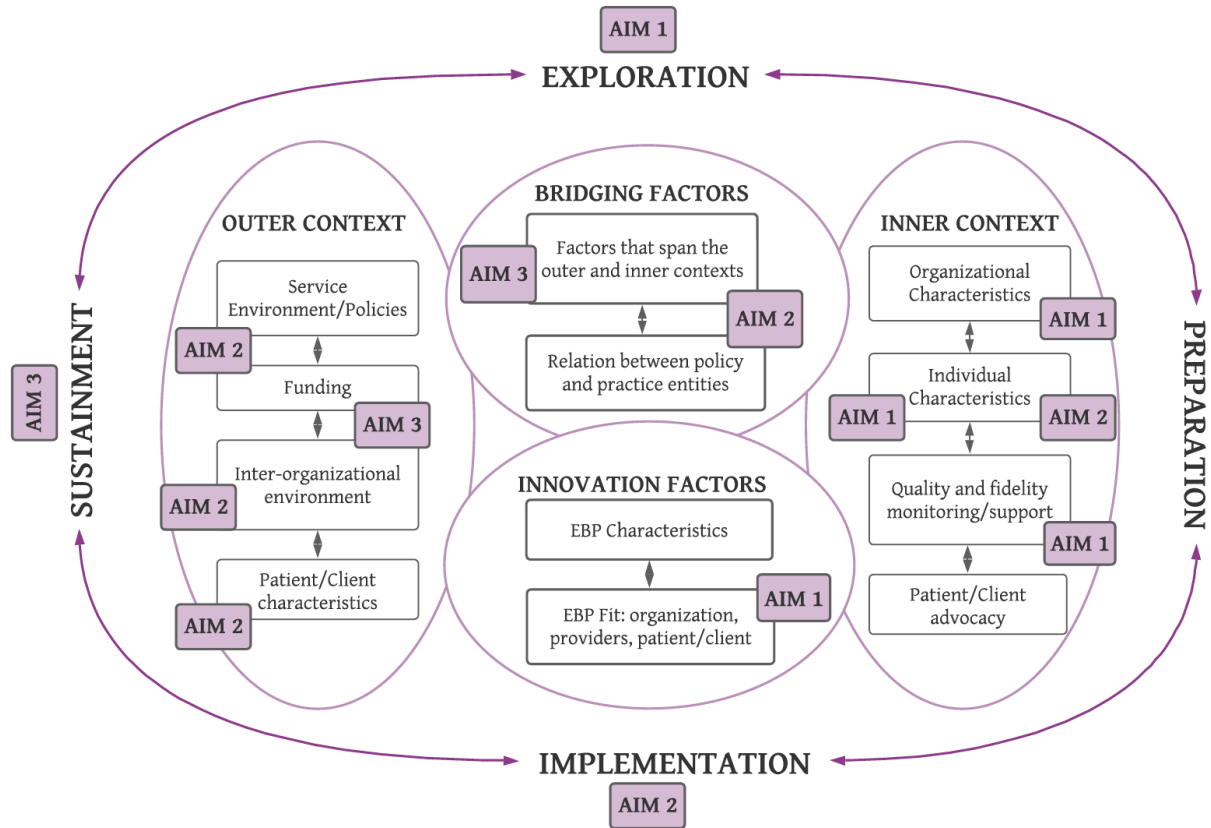


Figure 5:1: The Adapted Exploration, Preparation, Implementation, Sustainment (EPIS) Framework^{1,2}

The Exploration, Preparation, Implementation, Sustainment (EPIS) Framework (Figure 5.1) guided this dissertation to understand the critical implementation factors when rolling out EBPs into practice in the SUDT field.^{1,2} The four central constructs of this framework used were the inner context, the outer context, innovation factors, and the bridging factors involved. Three predominant conclusions can be elucidated from these findings. First, data from Chapter 2 and Chapter 3 show that the inner context element of individual characteristics of adopters of EBP, such as openness to trying new interventions, and the innovation factors of an innovation being appealing and effective, are related to their willingness and use of EBP. Second, Chapter and Chapter 3 highlighted the importance of organizational characteristics when it comes to EBP,

such as organizational support, which includes providing training and incentives for training. Third, Chapters 3 and 4 demonstrated the importance of funding, specifically insurance, and how it can be both a barrier and facilitator to accessing EBPs such as MOUD. These findings highlight the need for implementation practices to consider the inner and outer contexts, along with innovation factors and bridging factors when implementing EBPs and how implementation success can depend on individual actors, organizational characteristics, and the broader systemic structures in place.

In Chapter 2 (Aim 1), a total of 101 participants in California were surveyed using a cross-sectional anonymous web survey through Qualtrics to explore what attitude domains were associated with the frequency of EBP use. The attitude domains pertained to the inner context element of individual characteristics (openness), the inner context element of organizational characteristics (organizational support, requirements), the inner context element of quality and fidelity monitoring (feedback, monitoring), and the innovation factors construct (appeal). Hierarchical linear regressions demonstrated that the attitude domain of appeal is significantly associated with the frequency of use of EBP. None of the demographic variables were associated with the frequency of use of EBPs, which continues to add to the mixed results that exist in the literature, with some studies finding that being younger and being a woman are more associated with positive attitudes toward EBPs and the use of them, and other findings suggesting that personal characteristics of adopters of an EBP are not significant.³⁻⁵ These findings revealed that innovation factors, such as the appeal of an EBP, must be considered when implementing future EBP.

In Chapter 3 (Aim 2), a situational analysis was used to analyze the situation of getting patients on MOUD and was guided by the EPIS framework to find the implementation factors

related to this. The two constructs of focus were the inner and outer contexts, recognizing that elements from both can be bridging factors that show the interconnectedness of the treatment landscape. Specifically, regarding the outer context, features such as the service environment and policies, funding, funding for MOUD, funding for patients' needs, the inter-organizational environment and networks, and patient/client characteristics came up. For the inner context, themes such as leadership, training, organizational characteristics, and individual characteristics of providers were examined. These qualitative findings showed that the most significant barrier to MOUD treatment was navigating insurance plans to help patients afford and receive the medications. Participants shared stories on how getting insurance coverage for patients or battling with getting coverage was timely. However, some participants mentioned how they had been able to circumvent insurance issues by utilizing grant funding. Grant funding benefited not only the patients receiving MOUD but also providers by being able to free their time to pursue training. Participants also discussed the importance of training, whether at school before providers entered the workforce or providing incentives for people to complete necessary training when prescribing MOUD.

To examine the factors related to the SUDT facilities in California offering MOUD, Chapter 4 (Aim 3) used data from the N-SSATS 2020 survey, particularly concerning California treatment centers. Southern California is known as the Rehab Riviera, with over 1,100 rehabilitation and treatment facilities in only four counties.⁶ A total of 1,778 facilities in California were included and analyzed using multiple logistic regressions. The results illustrated that less than half of the facilities offered any MOUD (47.7%), and only 38.5% of facilities accepted Medicaid. We found that ownership type and accreditation were bridging factors in that they connected facilities with the outer context of funding. For example, private for-profit

facilities were more likely to accept cash or self-payment, private health insurance, federal military insurance, and IHS/Tribal/Urban funds, while government-owned facilities were more likely to accept Medicaid, Medicare, and state-financed insurance, along with more being likely to receive funding from the government. Accreditation was a bridging factor in that accreditation was associated with the funding type a facility received. For example, facilities that weren't accredited were more likely to receive government funding and accept Medicaid, Medicare, and state-financed insurance. In contrast, accredited facilities were more likely to accept cash or self-payment, private insurance, federal military insurance, and IHS/Tribal/Urban funds. Facilities that were private for-profit organizations were more likely to offer MOUD, with government-owned facilities being significantly less likely to offer it when compared to private for-profit facilities. Facilities that were accredited were over five times more likely to offer MOUD. Facilities accepting private health insurance were almost three times more likely to offer MOUD. Facilities that took IHS/Tribal/Urban funds were about 1.5 times more likely to offer MOUD. In addition, facilities that received funding or grants from the federal, state, county, or local governments had lower odds of offering MOUD.

IMPLICATIONS

This dissertation's results support using the EPIS Framework in implementation research in the SUDT field. Specifically, this dissertation supports this process model and its ability to identify factors of importance when implementing EBP in SUDT and how these factors can be interconnected at each phase. For example, the findings indicate that implementation is a multilevel process that takes place at the individual provider level (openness to new interventions), organizational level (organizational support, training), and systemic level (funding). One recommendation for the use of EPIS would be to describe the outcomes that the

framework can help contribute to. It seems the main outcome is the implementation of an EBP, but the constructs that are involved in EPIS could also lead to other outcomes, such as how different constructs can influence others. For example, our research found that innovation factors, such as the appeal of an EBP, were related to providers' use of EBP. These relationships could be better elucidated in future models of EPIS and show the complexity of the constructs and how they may interact with each other. By looking at the implementation process as existing on all levels, future implementation science research can better prepare for the successful introduction, use, and sustainment of EBPs in practice. Therefore, this dissertation has a number of implications.

First, a significant implication of this research is the appeal of an EBP being implemented, which is related to the innovation factor construct in EPIS. Chapter 2 suggests that providers finding an EBP appealing is associated with the extent to which they would adopt EBPs and use them. Before implementing a new EBP into practice, this dissertation shows that it is essential to gain providers' support in an intervention. Clinicians have cited reasons for not engaging in EBP is due to the lack of generalizability when it comes to research, randomized controlled trials not being as relatable to real-world clinical settings, lack of diversity in research participants, and EBPs focusing on different outcomes than what clients come to therapy for.⁷ To effectively use EBPs in practice, the characteristics and fit of the EBP in accordance with the clinicians asked to apply them should be taken into account to achieve better implementation outcomes. In addition, research on EBPs may need to focus more on their clinical outcomes and how they align with real-world practice to create EBPs that may have greater clinician buy-in. Past studies have found that if providers know that an EBP is effective and helpful for their clients, they will be more likely to use it.⁸ If SUDT providers are expected to be the

implementors of new EBPs, then having their support in these interventions is important to their success and sustainment. Chapter 3 also elucidated this by providers mentioning how finding out about MOUD and how effective it was, became a motivator in recommending and prescribing it. Although Chapter 2 did not find an association between education and the use of EBPs, future research may look at how education and training may affect the appeal of EBPs for providers.

A second significant implication of this research is how providers of SUDT may not receive SUD-specific education during school, despite its importance. SUD-specific education can benefit the future workforce by introducing them to EBPs and treatments before entering practice and better preparing them to work with people with SUD. Education may also help providers become more open to trying new EBP. In the past decade, rarely any medical schools covered substance use disorders, and only in the last five years have we seen schools, such as Stanford, launch curriculums with this focus.⁹ Physicians often cite the lack of knowledge about SUDs, specifically opioid use disorders, as a primary reason they do not prescribe MOUD.⁸ They have also reported a lack of education and residency opportunities with a SUD specialty, thus limiting exposure to this knowledge.¹⁰ This lack of education doesn't just exist in the medical field. Only about 14.3% of social work programs offer specialization for alcohol and drug problems, and only 4.7% have required courses on the topic.¹¹ Neither the social work nor the medical field is keeping up with the demands in SUDT.¹¹⁻¹³ Increasing SUD education can help increase the confidence of future providers who may work with people who have SUD, helping them feel more competent and comfortable in their practice.

A third implication of this dissertation is the importance of training when implementing EBPs. Like education, training can increase confidence in using EBPs. In past research, having a lack of training has been associated with not implementing or using EBPs.^{14,15} Training also

helps ensure that EBPs are being practiced correctly and with fidelity, along with improving the service quality.¹⁶ Chapter 3 of this dissertation briefly touched on how training was necessary, whether through the training required for the X-waiver, through peers and mentorship, or other outside training opportunities. Participants in Chapter 3 discussed how training on prescribing MOUD was made possible by being encouraged by mentors or receiving monetary incentives. However, in Chapter 2, organizational support for learning an EBP was associated with using EBPs at the bivariate level but not in the hierarchical linear regression. The results suggested that the appeal of an EBP is more critical when it comes to providers using it than training or learning provided by the organization. These results indicate that although training is important in making sure providers are confident in using it and ensuring that the EBP is being practiced correctly, the appeal of an EBP is more salient. The participants in Chapter 3 mentioned how they were interested in learning about MOUD as an EBP and saw its appeal and how the training helped increase their confidence in using it. There is no denying the importance of continued education and training, but providing incentives must go in tandem with training to give clinicians and providers adequate time and structure to attend them.

The fourth implication of this work is the importance of expanding on bridging factors in the EPIS framework, which is often left out of implantation studies.¹⁷ In Chapter 4, we identified how bridging factors such as accreditation and ownership of an organization bridge the outer and inner contexts. Bridging factors connect the two systems and provide a fuller picture of what can hinder or help the implementation process. This dissertation's work identified that facility type is related to the type of funding a facility receives and that both relate to offering MOUD, but the qualitative and quantitative results elucidated different outcomes. In the quantitative analysis (Chapter 4), it appeared that being a private for-profit facility and accepting private insurance

were related to offering MOUD more than government-owned facilities or ones accepting Medicaid. In addition, facilities receiving government funding were less likely to offer MOUD. However, in the qualitative analysis (Chapter 3), participants talked about how being on Medicaid actually helped patients get MOUD, and that government funding and grants helped organizations provide MOUD to their patients. By looking at the bridging factor of organization type and how it relates to the funding an organization receives, we were able to see how there may be a disconnect in the SUDT field. These findings suggest that although more facilities are private and accept private insurance, the ones that are government-owned or accept Medicaid may help patients receive MOUD.

Lastly, insurance companies may only cover certain types of MOUD rather than all, which shows the disparity between insurance companies understanding of the EBP. Insurance will always play a significant role in access to evidence-based treatment for people in the United States due to the structure of our healthcare system. People in countries with universal healthcare, such as France, Italy, Germany, and Australia, see fewer barriers to accessing care and have more access to treatment.¹⁸ Future policy changes can focus on the cost and benefit of different medications, along with how changing the health system in the United States may be more conducive to providing care.

LIMITATIONS

This dissertation has many strengths, including collecting primary data specific to the research questions, utilizing multiple methodological approaches, and focusing on California-based providers and treatment facilities to provide a strong socio-geographic context. However, this dissertation is not without limitations. These limitations are discussed below.

Self-Report

For Chapter 2, the survey was an anonymous online survey requiring self-report. Response bias may have occurred. Participants may have wanted to answer in a way they thought was desirable for the researchers. In addition, although the terms of EBP were defined in the survey, there is a possibility that the participants did not read this and may have needed clarification on what an EBP was. Self-report may also be a limitation in Chapter 4 if the person who filled out the N-SSATs for the facility misreported answers. The N-SSATS engaged in quality assurance of consistency and missing data but did not report if they checked if facilities answered questions truthfully about their facilities' offerings.¹⁹

Generalizability

For Chapter 2 and Chapter 3, non-probability sampling was used to recruit participants, making it difficult to generalize the findings. However, Chapter 3 was qualitative, and the goal was not entirely to produce generalizability but to provide a rich understanding of the situation being studied.²⁰ Additionally, the participants for Chapters 2 and 3 were not very diverse, with the majority being White women with advanced degrees. Although this is in line with current education trends of White women being the largest group in education, it may not be representative of the workforce in California.²¹ However, this information is not available to see how our participants compared to the SUDT workforce. Also, participants in Chapter 2 were mainly social workers or behavioral health workers, leaving out other SUDT workers in the field and thus reducing generalizability to them but potentially creating generalizability for social workers.

Sample Size

Chapter 2 had a smaller sample size (N=101), which was made smaller for certain variables when participants missed questions in the survey. However, this data was exploratory and in line with the power analysis conducted before the analyses. Our effect size for our hierarchical linear regression was $R^2=0.51$, $R=0.71$, or $f^2=1.04$, all being large effect sizes. With a sample size of 90 for the regression, since there was missing data, a $p=.05$, and 6 predictors, we got a power of 1.0.^{22,23} The smaller sample size may have also been due to the lengthy survey that was used for Chapter 2 and not being able to provide an incentive for everyone to finish their survey.

Secondary Analysis

Chapter 4 was a secondary analysis. Therefore, there were limitations on the research questions that could be assessed, such as knowing what counties facilities were located and if facilities had X-waivered providers available. The data set solely focuses on SUDT facilities and leaves out solo practitioners, primary care providers, and other service providers who may provide MOUD.

Researcher Bias

For Chapter 3, the analysis and the coding were all conducted by one person, which may lead to unintentional bias. To offset this potential bias, precautions were taken. First, detailed notes on each interview were taken, focusing on insights from the participants along with any personal interpretations. Second, mentorship and cross-examination were utilized in weekly meetings with others who had read the interviews that had been conducted. Lastly, personal

biases were brought up, focusing on how my experiences may be causing me to interpret the data.

FUTURE RESEARCH AND DIRECTIONS

The results of this dissertation shed light on the different implementation factors that can be used to implement EBPs into the SUDT field better, especially concerning medications for opioid use disorders (MOUD). In this study, we focused more on the general attitudes of EBPs and the use of EBP, rather than providers' attitudes about specific EBPs. Future research can look more into what contributes to the appeal of EBPs for providers and if openness to new interventions can be strengthened. In addition, future research on attitudes can continue to expand on the different domains and how they relate to implementing EBPs.

In addition, SUD is rarely required in the training curriculum for people entering the healthcare workforce, including mental health. Creating and implementing SUD curriculums is vital in raising awareness and creating a workforce that feels prepared and competent in working with substance use. SUDs are multifaceted, affect one's physical, mental, and social health, and require an interdisciplinary approach to treatment. SUD curriculums are essential to implement into education to recognize that health providers are more likely to work with a patient with substance use concerns than not. Future policies and educational goals should focus on implementing required SUD training and education in such programs and other health fields to ensure the success of prospective providers.

Recent research found that even though there was a recent change in the requirements for training to obtain an X-Waiver, it did not increase the number of clinicians prescribing MOUD.²⁴ However, the guidelines changed the number of people a provider who was waived could prescribe to, and this change saw that it increased treatment capacity.²⁴ Further research could

also be done to see if completing the X-Waiver promotes the use of MOUD or if being introduced to substance use disorders and treatment in medical schools is more pertinent. Policy efforts should concentrate on revisiting the X-Waiver and its guidelines.

Other directions for future research could be understanding if personal or organizational characteristics are more related to a provider using an EBP. Past implementation research strategies have focused on using organizations to increase attitudes toward EBP, such as by enhancing organizational support.^{16,25} However, our findings did not support that organizational support was related to using EBPs, but further research on this with a larger sample size could elucidate other findings. Future directions could assess if organizational requirements to use EBPs is more critical than providers' attitudes toward them. Moreover, further assessment is needed to see if organizational requirements of EBPs led to providers using EBP they disagree with and how that may affect implementation. By utilizing implementation science, we can reduce the 17-year gap between research and practice and ensure that the substance use disorder treatment field does not get left behind.¹⁷

Lastly, future policy implications may focus on ensuring that SUDT facilities are accredited to increase the use of MOUD. However, more research could focus on how accreditation plays a role in EBP implementation. Further inspection of how insurance affects access to MOUD and how to increase access and availability of such treatments is warranted. Future policies could focus on requiring government funding to go toward delivering MOUD, ensuring that EBPs are being used where government funding is received, and being stringent on guidelines for how government money is spent.

CONCLUSION

This dissertation contributes many findings to the existing research on evidence-based practice, especially medication-assisted treatment, in the substance use field by taking an implementation science approach. This study focused on treatment providers in the SUDT field and SUDT facilities in California. Implementation factors essential in incorporating EBPs into practice in the substance use disorder treatment field appeared to be pertinent in all areas of the EPIS Framework, such as the outer context, inner context, bridging factors, and innovation factors. The inner context elements that were important in this dissertation were adopters' individual characteristics, openness and attitudes toward EBPs, and organizational characteristics such as leadership and training. Outer context elements were funding sources, the service environment and policies, the inter-organizational environment, and patient characteristics. Bridging factors consisted of the ownership of a facility and accreditation, and innovation factors such as the appeal of an intervention. In addition, recognizing how policies can bridge the inner and outer context is also important to consider when trying to implement EBPs into practice. Overall, the results indicate a need to revisit the attitudes of providers who help implement EBPs, along with policies and systemic structures in place that may limit the ability of substance use disorder treatment to best serve people with substance use disorders and reduce the disparities in treatment.

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APPENDIX A. Final Survey for Substance Use Providers for Chapter 2

Q1 We appreciate your interest in this study on exploring substance use providers' perceptions on telehealth, evidence-based research, and treatment.

Your participation in the study will last approximately 15-30 mins and is completely voluntary. If you choose not to participate, it won't affect your relationship to any program you are affiliated with or SDSU. You will also be given a chance to enter a raffle to win a \$50 Amazon gift card. You do not have to participate in the study to be entered into the drawing. The odds of winning a gift card is approximately 1 in 10. Drawings for 10 cards will take place by March, 2022, at which time winners of the drawing will be notified by email. Your email will not be attached to your survey answers.

Below you will find the SDSU IRB approved consent form.

[Informed consent](#)

If you would like to take the survey and are 18 years or older, please continue. If you would no longer like to take the survey please exit the survey window.

- Yes, I would like to continue. (1)
- No, I do not wish to participate. (2)

Q2 First, we will start with getting some information about you.

What is your racial and ethnic identity? (Choose all that apply)

- Asian or Pacific Islander (1)
- Black or African American (2)
- Native American or Alaskan Native (3)
- White (4)
- Hispanic or Latino (5)
- Other (6) _____

Q3 What is your gender identity?

- Female (1)
- Male (2)
- Transgender Female (3)
- Transgender Male (4)
- Non-binary/Gender non-conforming (5)
- Not listed (6) _____
- Prefer not to answer (7)

Q4 What is your sexual identity/sexual orientation?

- Straight (1)
- Bisexual (2)
- Gay/Lesbian (3)
- Pansexual (4)
- Queer (5)
- Questioning or unsure (6)
- Asexual (7)
- Not listed (8) _____
- Prefer not to answer (9)

Q5 How old are you?

- 18-19 (1)
- 20-29 (2)
- 30-39 (3)
- 40-49 (4)
- 50-59 (5)
- 60 and over (6)
- Prefer not to answer (7)

Q6 What is your highest education level:

- GED (1)
- High School (2)
- Associate Degree (3)
- Undergraduate Degree (4)
- Master's Degree (MSW, MFT, MA, MPH, etc) (5)
- Doctorate Degree (PhD, MD, etc) (6)
- Other (7) _____

Q7 Number of years you have worked in substance use treatment:

Q8 What are your credentials? (LCSW, LMFT, CADAC, MD, PA, NP, etc).

Q9 What type of substance use treatment service provider are you?

- AOD Counselor (1)
- Behavioral Health Clinician (2)
- Medical Provider (3)
- Outreach Worker (4)
- Inpatient Provider (5)
- Psychiatrist (6)
- Intern (7)
- Other (8) _____

Evidence Based Practice Questionnaire (EBPQ).

This questionnaire is designed to gather information and opinions on the use of evidence based practice amongst health professionals. There are no right or wrong answers for we are interested in *your* opinions and *your* own use of evidence in *your* practice.

1. Considering your practice in relation to an individual patient’s care over the *past* year, how often have you done the following in response to a gap in your knowledge (please \checkmark or X):

Formulated a clearly answerable question as the beginning of the process towards filling this gap:

Never **Frequently**

Tracked down the relevant evidence once you have formulated the question:

Never **Frequently**

Critically appraised, against set criteria, any literature you have discovered:

Never **Frequently**

Integrated the evidence you have found with your expertise:

Never **Frequently**

Evaluated the outcomes of your practice:

Never **Frequently**

Shared this information with colleagues:

Never **Frequently**

2. Please indicate (by \surd or X) where on the scale you would place yourself for each of the following pairs of statements:

- | | | | | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|
| My workload is too great for me to keep up to date with all the new evidence | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | New evidence is so important that I make the time in my work schedule |
| I resent having my clinical practice questioned | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | I welcome questions on my practice |
| Evidence based practice is a waste of time | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Evidence based practice is fundamental to professional practice |
| I stick to tried and trusted methods rather than changing to anything new | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | My practice has changed because of evidence I have found |

3. On a scale of 1 to 7 (with 7 being the best) how would you rate your:

Please circle one number for each statement								
	Poor				Best			
Research skills	1	2	3	4	5	6	7	
IT skills	1	2	3	4	5	6	7	

Monitoring and reviewing of practice skills	1	2	3	4	5	6	7
Converting your information needs into a research question	1	2	3	4	5	6	7
Awareness of major information types and sources	1	2	3	4	5	6	7
Ability to identify gaps in your professional practice	1	2	3	4	5	6	7
Knowledge of how to retrieve evidence	1	2	3	4	5	6	7
Ability to analyse critically evidence against set standards	1	2	3	4	5	6	7
Ability to determine how valid (close to the truth) the material is	1	2	3	4	5	6	7
Ability to determine how useful (clinically applicable) the material is	1	2	3	4	5	6	7
Ability to apply information to individual cases	1	2	3	4	5	6	7
Sharing of ideas and information with colleagues	1	2	3	4	5	6	7
Dissemination of new ideas about care to colleagues	1	2	3	4	5	6	7
Ability to review your own practice	1	2	3	4	5	6	7

Evidence-Based Practice Attitude Scale (EBPAS)© 36

The EBPAS assesses attitudes toward adoption of an evidence-supported intervention (ESI) and evidence-based practice (EBP) in social service settings.

Items are presented on a 5-point Likert scale from 0 “Not at All” to 4 “To a Very Great Extent”.

Adapted with Permission

Source: Rye, M., Torres, E. M., Friborg, O., Skre, I., & Aarons, G. A. (under review). The Evidence-based Practice Attitude Scale-36 (EPBAS-36): A brief and pragmatic measure of attitudes to evidence-based practice validated in Norwegian and U.S. samples. *Implementation Science*.

Evidence-Based Practice Attitude Scale

THE PAPERWORK REDUCTION ACT OF 1995 (Pub. L. 104-13)

Public reporting burden for this collection of information is estimated to average .17 hours per response, including the time for reviewing instructions, gathering and maintaining the data needed, and reviewing the collection of information.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

The following questions ask about your feelings about using new types of interventions.

Intervention refers to any specific practice, service, policy, strategy, program, practice model, or combination thereof.

Evidence-Supported Intervention (ESI) refers to any specific intervention that the best available evidence shows, based on rigorous evaluation, has the potential to improve outcomes for children and families.

Evidence-Based Practice (EBP) refers to the integration of the best available evidence with clinical, practitioner and cultural expertise in the context of child and family characteristics, culture, and preferences.

Manualized Intervention refers to any intervention that has specific guidelines and/or components that are outlined in a manual and/or that are to be followed in a structured/ predetermined way.

For questions 1-6: Circle the number indicating the extent to which you agree with each item using the following scale:

0	1	2	3	4
Not at all	Slight extent	Moderate extent	Great extent	Very great extent

For questions 1-6: Select the number indicating the extent to which you agree with each item using the above numerical scale:

1. I like to use new types of interventions to help my clients
0 1 2 3 4
2. I am willing to try new types of interventions even if I have to follow a treatment manual.....
0 1 2 3 4
3. I am willing to use new and different types of interventions developed by researchers.....
0 1 2 3 4

- 4. Evidence-supported interventions are not clinically useful
0 1 2 3 4
- 5. Clinical experience is more important than using manualized interventions.....
0 1 2 3 4
- 6. I would not use a manualized intervention
0 1 2 3 4

For questions 7-12: If you received training in an intervention that was new to you, how likely would you be to adopt it if:

- 7. it “made sense” to you? 0
1 2 3 4
- 8. it was required by your supervisor?
0 1 2 3 4
- 9. it was required by your agency?
0 1 2 3 4
- 10. it was required by your state?
0 1 2 3 4
- 11. it was being used by colleagues who were happy with it?
0 1 2 3 4
- 12. you felt you had enough training to use it correctly?
0 1 2 3 4

For questions 13-15: If you received training in an intervention that was new to you, how likely would you be to adopt it if:

- 13. you knew it was right for your clients
0 1 2 3 4
- 14. you had a say in how you would use the intervention.....
0 1 2 3 4
- 15. it fit with your clinical approach
..... 0 1 2 3 4

For questions 16-36: Select the number indicating the extent to which you agree with each item:

16. Evidence-based practice is not useful for clients with multiple problems
0 1 2 3 4
17. Evidence-based practice is not individualized treatment
0 1 2 3 4
18. Evidence-based practice is too narrowly focused
0 1 2 3 4
19. I prefer to work on my own without oversight...
0 1 2 3 4
20. I do not want anyone looking over my shoulder while I provide services
0 1 2 3 4
21. My work does not need to be monitored.
0 1 2 3 4
22. Achieving a positive outcome in child welfare is more of an art than a science
0 1 2 3 4
23. Direct practice is both an art and a science
0 1 2 3 4
24. My overall competence as a practitioner is more important than a particular approach
0 1 2 3 4
25. I don't have time to learn anything new
0 1 2 3 4
26. I can't meet my other obligations
0 1 2 3 4
27. I don't know how to fit evidence-based practice into my administrative work
0 1 2 3 4
28. Learning an evidence-supported intervention will help me keep my job
0 1 2 3 4
29. Learning an evidence-supported intervention will help me get a new job
0 1 2 3 4
30. Learning an evidence-supported intervention will make it easier to find work 0
1 2 3 4

31. I would learn an evidence-supported intervention if continuing education credits were provided.....
0 1 2 3 4

32. I would learn an evidence-supported intervention if training were provided
0 1 2 3 4

33. I would learn an evidence-supported intervention if ongoing support was provided
0 1 2 3 4

34. I enjoy getting feedback on my job performance
0 1 2 3 4

35. Getting feedback helps me to be a better practitioner/case manager
0 1 2 3 4

36. Getting supervision helps me to be a better practitioner/case manager
0 1 2 3 4

Please answer the following questions from the TCU Organizational Readiness for Change survey about training based on the following scale:

Disagree Strongly	Disagree	Uncertain	Agree	Agree Strongly
(1)	(2)	(3)	(4)	(5)

1. Staff training and continuing education are priorities in your program.
2. You learned new skills or techniques at a professional training in the past year.
3. Your program holds regular in-service training.
4. The budget in your program allows staff to attend professional training.

APPENDIX B: Final Qualitative Interview Guide for Providers (Chapter 3)

Substance Use Treatment Providers

First, we'd like to learn a little bit about your role as a provider of substance use treatment services.

- How many substance use treatment centers have you worked in?
 - Probe on preference/differences working in a facility that offered MAT vs not
- Could you please tell me a little more about the type of program you are currently working in?
 - Is this facility part of an organization with multiple facilities or sites that provide substance use treatment? Does that make it easier or harder to get referrals?
 - Does your program offer MAT? If so, which medications are available? (Probe on meaning, e.g. 5-day taper vs long-term)
 - Are there any other medications available at your facility (probe for detox and naloxone)?
 - What other type of ancillary services are offered at your facility (e.g., overdose prevention, HIV/HCV treatment, mental health groups, smoking cessation, childcare, residential beds for children, employment counseling, peer recovery support)?
 - Are there other services you link to outside of your facility?

Referral Process

In the next few questions, I will be referring to the drug treatment referral process, that is the series of steps or actions that it takes for a person (i.e., health care provider, family, friend) to help enroll a person with a substance use disorder into treatment at the facility where you work.

- Could you please give me an example of a referral that initiates with a phone call?
 - What about a walk in?
 - What other ways might someone initiate contact with your program?
 - Are there differences in the way referrals are handled, based on their source or method (walk in vs. call)?
 - Are there differences if the phone call is from a provider (hospital-based, community-based) vs family/acquaintance vs self?
- Can you walk me through the intake process?
 - What factors do you assess to determine whether someone is eligible? What kinds of things might make someone ineligible?
 - If not covered by insurance, what do you do?
 - What factors determine whether someone is able to start treatment that day?
 - Probe for: insurance coverage, need for pre-authorizations, wait times, bed availability
- How do you make decisions about the treatment plan and/or options for medication?
 - Probe for: insurance coverage (including pre-authorization), patient preferences, source/nature of referral
- Can you give me an example of why a referral might be unsuccessful? That is, why might patients not end up enrolling in treatment once they get to you?
 - Probe for: insurance, source of referral, patient preferences

- If your program offers MAT, what are the important factors you consider when helping someone decide on the right medication?
 - Probe for: insurance coverage, pre-auths, patient preferences, source/nature of referral
- If your program doesn't offer MAT, but the patient expresses an interest in it, what do you do?
 - Would you be willing to accept someone who can fill a MAT prescription outside of your facility? In other words, would a person be able to complete your program while taking buprenorphine/naloxone prescribed by a family physician?
 - If the patient decides to stay at your facility but also initiates MAT, how do you work with that patient?
 - Are there any challenges that come up? How do you resolve them?

EPIS Framework Questions

1. In your experience, what are some of the outcomes that you look for when treating someone with an opioid use disorder? What are outcomes that are specific to the use of MOUD?
2. Can you tell me about a time where a referral to MOUD seemed clinically appropriate but the referral didn't happen? What barriers may have come up?
 - a. How has funding played a role in referral and use of MOUDs in clients?
 - b. Are there any funding streams or funding sources that make it easier to provide MOUD to clients?
 - c. Do you have any government funding that makes it possible for those without insurance to get on MOUD?
 - d. What is like navigating the healthcare landscape when getting someone initiated and on MOUD?
3. Can you walk me through what has been helpful in facilitating getting someone on MOUD?
4. How has policy that has been put in place impacted your ability to refer clients to or prescribe MOUD?
 - a. Are there specific policies that have made it easier or harder to offer this service?
 - b. How has the X-Waiver impacted your work? What are your thoughts on the X-Waiver not being required?
5. What would help with the sustainment of being able to refer people to MOUD and keep them on it?
6. In general, what are barriers or facilitators that occur with people who are trying to get on MOUD?
7. Can you tell me about the process of an MOUD referral? When prescribing MOUD, do you also encourage your clients to seek other treatment, such as psychosocial or behavioral therapy?
8. Have you had experience with working with behavioral health clinicians? How do their attitudes toward MOUD differ or align with yours?

Referrals from Law Enforcement/Criminal Justice System

When we started this research project, the San Diego County Sheriff Department had started a program in which they would refer people who had experienced an overdose to a treatment facility. The way the program worked was that the officer would get contact information for the person and forward that on to the treatment center. A counselor or case manager would then call the patient and schedule a time to talk. In the first several months of the program, the officers made 9 referrals, and 3 people made at least one visit to the program.

- In general, what are your initial thoughts or impressions about a referral program like that, where law enforcement officers refer people to treatment after an overdose?
 - What do you see as the pros and cons of that kind of program?
 - What kinds of barriers or challenges would you look out for?
 - What kinds of solutions might you propose to those barriers?
 - How would you keep track of who was referred by law enforcement? Would that be useful information?
- Have you ever received patient referrals from the San Diego Sheriff Department?
 - If so, how did that go?
- What about any other law enforcement agencies?
- Have you ever received referrals from the County of San Diego Adult Drug Court?
 - If so, could you please tell me more about that experience?
 - Do you have a specific number of referrals you receive?
 - In November 2014 Proposition 47 reduced many drug crimes to misdemeanors in California. Did you observe any changes in the volume of referrals following that change?
 - Are there any other events that have influenced your volume of referrals?
- Does the type of treatment or treatment plan differ among referrals from law enforcement/drug court versus other referral sources?
 - Is there anything that you consider easier or harder when trying to provide services for someone who comes to you via a law enforcement or drug court referral? (Probe for practical issues integrating the referral, e.g. timing, availability of beds/counselors).

Overdose as a “teachable moment”?

In the next few questions, I will be referring to interventions that occur following a recent overdose. This can be an overdose your patient experienced or one that the patient witnessed.

- In your experience, do patients ever talk about having recently experienced an overdose when they contact you to initiate treatment? Can you give me some examples of how people talk about that?
 - Probe for if/how law enforcement was involved, if at all.
 - Do stories of witnessing overdose or experience it factor into why people come into treatment?
 - Do patients tell you these stories as part of their rationale as to why they arrive at treatment? How does overdose factor in?
- Do patients ever talk about having seen someone else overdose when they contact you to initiate treatment? Can you give me some examples of how people talk about that?
 - Probe for if/how law enforcement was involved, if at all.
 - How is it communicated to the provider for treatment?
 - Are these experiences recent (i.e. 3 days versus months)?

- Are there any particular procedures you follow when doing an intake for someone who has recently experienced an overdose?
 - Probe for overdose prevention training
- Have you ever witnessed an overdose at a substance use treatment center?
 - If so, could you tell me more about that event? (probe on 911 call and naloxone use)
 - If not, why do you think that is?
- Does your facility have naloxone on site?
 - If yes, can you tell me about that? How long have you had it? When and how was it introduced?
 - Is it for staff use or for distribution to patients?
 - What is the general feeling among the staff about having naloxone on site?
 - If no, why not? What is the general feeling among the staff about having naloxone on site?

Sherriff Department (for McAllister)

In a study we started in 2015, the Sherriff Department stated that they had a strong relationship with McAllister and would send patient referrals when possible.

- What is the nature of the partnership now? If it changed, why do you think that is?

What are the gaps in the structure of MAT expansion as it exists right now. Are people who want MAT able to get it?

What happens when someone who wants MAT ends up at a different kind of treatment facility? If the first place you end up is not a MAT-friendly place, how does that impact your ability to get MAT if that's what you really want?

What happens when someone walks in your door and wants MAT?