

Medication Assisted Therapy and Women with Opiate Use Disorder and Children:

A Study of Stigma

by

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Abstract

Substance use disorder (SUD) is often perceived by the public as dangerous and immoral, with individuals perceived as dangerous and to blame for their diagnosis. Women with children often struggle with opiate use disorder (OUD) and face unique and additional forms of stigma due to gender biases and societal expectations. The stigmatization and discrimination can lead to dangerous consequences such as treatment avoidance and higher rates of relapse in the year postpartum. Understanding nuances of stigma and how SUDs are perceived can help reduce these outcomes.

Participants (N=254) were shown a vignette about a woman who had a history of intravenous heroin use, which caused her to lose her job and ability to care for her son. She chooses to stabilize on a medication for OUD and is able to abstain from illicit substances for 3-years while regaining employment and care of her son. Participants were asked to complete several measures of stigma to assess their views toward mental health, substance use, and opiate use more specifically.

These findings suggest that mental health is distinct from substance use stigma, and individuals with children are more likely to feel negatively toward women with an OUD history, even when the individual is engaged in medication assisted therapy and has actively abstained from drug use for several years. This was particularly true when these women were in a caregiving or educational setting.

Stigma toward perinatal women with OUD, even when sustaining recovery, can be especially enduring due to lingering negative perceptions about their social deviance. Psychoeducation about factors involved in OUD and treatment options may counteract this prevalent negative view.

Chapter I

Introduction

Over the past 20 years, the number of individuals in the US with an opiate use disorder (OUD) has risen dramatically. In 2019, ten million individuals misused opiates (SAMHSA, 2020) and 47,600 experienced fatal overdoses in the United States alone (NIDA, 2021). While there are treatments available such as medication assisted therapy (MAT), which is considered the gold standard for OUD, it remains widely underutilized. Among the many medical, financial, and social barriers to treatment, a widely cited reason for this is stigma. Stigma is multi-faceted and is enacted at different levels throughout society, which has been shown to lead to treatment avoidance and other adverse events for impacted individuals. This is likely because drug users are perceived as immoral, self-serving, and to blame for their condition (Corrigan, 2009b; 2003; 2001a; Mushtaq et al., 2015). Stigma is especially pronounced for mothers with an opiate use history, as they exist in the middle-ground between two extreme perceptions of identity: one of a mother, who is selfless, nurturing, and protective, and a substance user, who is selfish, reckless, and self-destructive (Cooke et al., 2023). Understanding stigma toward mothers with OUD who choose to stabilize on MAT can provide a more informed and compassionate approach to addressing this population.

Substance use disorder (SUD) has emerged as a prevalent and pressing public health challenge, transcending geographic, cultural, and socioeconomic boundaries. The widespread and alarming rise in SUD cases demands immediate attention and comprehensive understanding. Defined by a complex interplay of biological, psychological, and social factors, SUD

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encompasses a range of addictive behaviors, from alcohol and nicotine to illicit drugs and prescription medications. In 2021, an astounding 21.9 percent of the population or 61.2 million people used illicit drugs in the past year (SAMHSA, 2023). Of those individuals, 46.3 million met DSM-5 criterion for a substance use disorder during that time, 24 million of whom had a drug use disorder. Despite universally elevated rates of drug use, a startling 75% of the drug overdose deaths in 2020 involved an opioid (SAMHSA, 2023). Opiate use disorder (OUD) is defined by the DSM-5 as a chronic misuse of opiates that causes clinically significant impairment or distress, resulting in two or more criteria to be endorsed over a 12-month period (American Psychological Association, 2013). Opiate use disorder has become an increasingly urgent issue with the opiate crisis being declared a public health emergency in 2017. In 2021, 9.2 million people aged 12 or over reported opiate misuse, with an estimated 2.4 million people currently meeting criteria for OUD. Between 2019 and 2020, overdose fatalities increased by 38% overall and synthetic opioid deaths increased by 56% during this time. While these numbers continue to climb, it is vital to engage in a comprehensive evaluation of what led to such a pervasive problem (Murphy & Polsky, 2016; Shulman et al., 2019; NIDA, 2021).

Causal Factors for OUD

The US opiate epidemic is a multi-dimensional issue with biological, psychological, and social burdens to consider. A robust theory of etiology discussed in the literature is over prescription. Although prescribing of opiates in the past 20 years has increased exponentially (Dasgupta et al., 2018), the reality is much more complex. In the 1980's, patients began to approach pain relief differently due to increased life expectancy and a lower pain tolerance threshold, beginning the view of pain as a fifth vital sign in medical practice (Dasgupta et al., 2018). Pharmaceutical companies were able to inaccurately claim that opioid medications were

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dependence-free (Dasgupta et al., 2018). People turned to a cheaper and more potent alternative when doctors became stricter with prescribing amidst growing dependency on opiate pain medications. Increased heroin use spurred the production of synthetically-produced Fentanyl, which caused overdose deaths to spike 540% nationally (Dasgupta et al., 2018). These factors are believed to have steadily increased OUD, addiction, and overdose over the past three decades. This suggests that overprescribing may not have been the main offender in the epidemic, but just one factor among many.

Other influences are thought to contribute to the development of an OUD, including biological and psychological vulnerabilities. Deficient neurotransmitters such as endorphins or dopamine may make an individual more susceptible to the reinforcing and euphoric effects of an external drug (Dydyk et al., 2020). Elevated norepinephrine, which is hypothesized to be genetic but exacerbated by environment, has been thought to contribute to the risk for substance use disorder development (Fitzgerald, 2013). Further, those with a first degree relative with any substance use diagnosis are 50% more likely to develop an opiate use disorder (Kendler et al., 2003). While heritability markedly contributes to disorder risk, environment also plays a part. When drugs are normalized by peers or family, this can also contribute significantly (Dydyk et al., 2020). On top of a strong genetic load, shared environmental risk factors such as family discontinuation, poor parental supervision, and low social rearing class contributed to the development of externalizing disorders and their common comorbidities (Kendler et al., 2003).

Diagnoses such as depression, post-traumatic stress disorder (PTSD), and anxiety are more likely to occur when a substance use diagnosis is present (Dydyk et al., 2020). Childhood trauma and abuse have been found to influence drug use and play an impacting role in the development of SUDs (Dydyk et al., 2020). Social and structural issues are also thought to play a

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role in the uptick of opiate use in the past several decades. Economic hardship, somaticized pain from trauma, disability, emotions such as hopelessness, and increasing work requirements have been suggested as factors that led the United States to be the largest consumer of opiate products in the world (Dasgupta et al., 2018). Despite growing prevalence, stigma remains one of the most relevant barriers to treatment for those impacted. This is due to a history of stigma that has been associated with these disorders since their earliest conceptualization.

The United States has a history of solving the perceived “moral issue” of substance use through legal interventions, which solidified an early view of its parallel with criminal behavior (Brezing & Marcovitz, 2016). Treatment for this disorder developed outside of the traditional medical-based psychiatric model and there was little effort put into understanding its neurological underpinnings. Those with OUD were often physically and financially isolated, meaning that facilities were run outside of conventional hospital settings and insurance companies did not reimburse for these services (Brezing & Marcovitz, 2016). Substance use research only began to develop after Vietnam veterans returned from war with high rates of heroin dependence (Brezing & Marcovitz, 2016; Mintz et al., 1979). The National Institute on Drug Abuse began to invest more money into researching the neurobiological roots of substance use and its complex etiology. As this model of SUD developed, research was collected to show it as a chronic medical issue with psychosocial, genetic, and environmental factors that play a salient role (McLellan et al., 2000). Despite this, the early criminalization and societal stigma toward all kinds of substance use remains largely unchanged to this day (Schomerus et al., 2011).

Conceptualization of stigma in substance use

Substance use disorder remains one of the most stigmatized conditions worldwide due to the perception of voluntary onset, lack of willpower, and social deviance (Corrigan et al., 2009b;

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2003; 2001a; Mannarini & Boffo, 2015). Those with SUD are often vulnerable to substance use due to marginalization status. While those enacting stigma often feel it serves to prevent further drug use, it has been shown to have a contrary effect; stigma is associated with higher rates of relapse and adverse physical and mental health outcomes (Ahern et al., 2006).

Stigma was first formally conceptualized by the sociologist Erving Goffman as something that reduces an individual “from a whole and usual person to a tainted, discounted one” (Goffman, 1963). There are several conceptualizations of stigma that assist in understanding how they impact communities. In the mental health and substance use literature, different levels of stigma are discussed. The literature in this area discusses institutional (also referred to as professional or structural), social (also called group stigma), and self-stigma, which each interact and impacting the individual and culture at large in different ways (Corrigan et al., 2009a; Ahmedani, 2011; Subu et al., 2021). These level-specific constructs are suggested to help understand how stigma may develop in modern society.

Institutional stigma exists systemically within the healthcare system, government, and areas of employment (Livingston, 2021; Subu et al., 2021; Ahmedani, 2011). This can include discriminatory policies or barriers to access that lead certain groups unable to benefit from resources, programs, and opportunities within these systems. For example, stigma in the healthcare system reduces treatment seeking, care quality, patient trust, and adherence (Ahern et al., 2006; Committee on the Science of Changing Behavioral Health Social Norms et al., 2016). This can cause issues of access and quality with healthcare workers, such as unequal access, neglect, withholding of services, fragmented care, negative attitudes, and coercive or paternalistic approaches (Livingston, 2021). Institutional stigma in this sense can cause a trickle-down effect on the way groups are perceived by the general public, leading to social stigma.

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Social stigma is suggested to develop from the need of society to group those who are different to them. Stigmatized attitudes and beliefs towards individuals with drug use disorders are often in the form of social stigma, which is structural within the general public. The insidious nature of this is due to frequently held individual beliefs about SUD, which add a level of commonality, contribute to a general consensus, and ultimately normalize and reinforce these ideas as stereotypes (Ahmedani, 2011). This is theorized to stem from an “us versus them” mentality, meaning that individuals tend to treat those they perceive as peers or part of their “group” more positively than those they see as outsiders. Social stigma can also continue this cycle by contributing to institutional stigma (Ahmedani, 2011). Health care workers, government employees, and hiring directors are all individuals with thoughts and beliefs that make up the general public, and their attitudes often reflect a larger societal value at the group level. Social stigma can also reinforce stereotypes which may influence how public policy is decided, causing institutional level stigma. For example, Americans are more likely to perceive those with SUDs as dangerous and unpredictable than other countries (Jorm & Reavley, 2014; Schomerus et al., 2011). These widespread beliefs can lead public policy to de-emphasize issues that support those with substance use problems. The impact of institutional level stigma has a mutually reinforcing effect on group level stigma and can cause internalized stigma for those with SUDs (Brezing & Marcovitz, 2016).

Due to structural and group level beliefs about substance users, individuals often have established negative views due to their context within society by the time they personally meet criteria for an SUD (Committee on the Science of Changing Behavioral Health Social Norms et al., 2016). Due to this environment of judgement, when a person develops substance use issues, they often feel shame and have a diminished sense of self-worth which leads to isolation and

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avoidance of treatment. Self-stigma is characterized by negative feelings, maladaptive coping, and stereotype alignment (Livingston, 2012). Research has shown that self-stigma in substance use disorders is associated with reductions in self-concept, hope, self-esteem, social, academic, and job engagement, treatment participation, and overall quality of life (Jones & Corrigan, 2014; Subu et al., 2021). Given this deleterious impact, it is important to understand the greater construct of stigma and how it exists structurally, interpersonally, and individually.

Another second way of understanding stigma is proposed in Corrigan's attribution model of discrimination, which is often discussed in the SUD stigma literature. It includes themes of dangerousness, contagion, blameworthiness, treatability and immorality, stating that these factors are significant predictors of stigmatizing beliefs and provide insight to the extent to which disorders are viewed as deviant (Corrigan et al., 2009a, 2003, 2001a, 2001b). Substance use has been found to significantly associate with all five constructs of discrimination, which can account for the discrepancy in views between mental health conditions and substance use disorders (Yang et al., 2017; Mushtaq et al., 2015).

Mental Health versus Substance Use Disorder Stigma

Substance use disorder stigma often stems from misconceptions and moral judgments about SUD as a choice or a character flaw rather than recognizing it as a complex health condition. People with SUD may face social exclusion, discrimination, and barriers to employment, healthcare, and housing due to the stigma, even in recovery (Lee & Boeri, 2017; Link et al., 1997). While there are overlaps between mental health stigma and SUD discrimination, OUD stigma can be particularly pronounced due to the perceived moral implications and societal views around drug use (Mak et al., 2007). Mental health and SUD tend to be seen as distinct categories. While mental health conditions like depression and anxiety

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appear to be more accepted, substance use remains highly stigmatized (APA, 2019; Brown, 2011).

Corrigan's attribution model and the research done in this area provides data on the distinction between mental health and substance use disorder stigma. Studies have found significant evidence suggesting that the general public views substance use as a distinct category of illness when compared to other mental diagnoses (Yang et al., 2017; Mushtaq et al., 2015; Schomerus et al., 2011; Corrigan et al., 2009a). Research in this area provides context for the discussed themes of the model to explain the distinct view of SUD.

The concept of perceived danger was viewed to see how this impacted stigma. Dangerousness was viewed as the most important factor contributing to opiate use stigma, even when compared to other constructs such as contagion, morality, views toward treatment, and blame-worthiness (Mushtaq et al., 2015). Heroin users were regarded highly on a dangerousness scale when compared to conditions like depression and diabetes. Comparisons looking at "harder" drugs (such as heroin) versus "softer" drugs (such as marijuana) found negligible differences in views of dangerousness (Sorsdahl et al., 2012), suggesting that drug type does not significantly change these perceptions. These findings suggest that dangerousness is likely one distinctive perception contributing toward the unique views of opiate users and SUD overall.

Blameworthiness and contagion are factors that are proposed to relate to OUD in some ways and to SUD overall. Blame suggests that those with SUD have a hand in the development of their disorder, while contagion considers stigma based on whether an individual with an illness is likely to pass a communicable disease onto others based on their status. Heroin users were found significantly more to blame for their condition than other mental illnesses (Yang et al., 2017; Mushtaq et al., 2015; Thege et al., 2015; Crisp et al., 2005). Contagion was also a

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significant predictor of stigma, perhaps due to the association of related illnesses to intravenous transmission such as hepatitis and HIV (Mushtaq et al., 2015). While diagnoses such as schizophrenia were low on a scale of blame, heroin use was high (Mushtaq et al., 2015). This provides additional information that may suggest why substance use is viewed independently from the larger category of mental illness.

While being subject to higher blame, drug users were also seen as more in control of their illness and less capable of benefiting from treatment (Mushtaq et al., 2015). These indicators of blame and treatability suggest a common belief held by the public that individuals with OUD have chosen to use drugs, making them culpable in their diagnosis. Another study showed that respondents believed that OUD was low in treatability, similar to beliefs about ongoing criminality (Crespo et al., 2008). Illnesses like depression and anxiety were shown to have much a higher believed ability to recover. This may speak to the public's view that substance users are incapable of being helped by medical or psychological intervention and further suggests that substance use is on par with criminal activity, which is typically seen as immoral. However, the research on treatability is not conclusive. Contrary findings indicated that those with SUD could recover without treatment if they wanted to (Crisp et al., 2005; Crisp et al., 2000). This belief can be a double-edged sword for stigma, suggesting blame for diagnosis and viewing continued use as an unwillingness to recover. The dichotomy in beliefs about treatability provide support for the "why try" mentality that is often described by opiate users (Crapanzano et al., 2022; Scorsone et al., 2020). This implies that the effects of stigma are so enduring, those impacted can often feel that no matter what path they choose, they are judged (Conner et al., 2008).

Immorality is a common association with drug use. This can lead to assumptions that those with OUD lack an ability to make good decisions for themselves. Views of immortality

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were shown to significantly account for variation in stigma toward heroin users (Mushtaq et al., 2015). Paternalistic views about those who use substances are related to the perception of immorality. For example, those with cocaine use disorder were thought to be unlikely to make beneficial treatment or financial decisions when compared with other mental illnesses such as schizophrenia, major depression, and alcohol dependence (Yang et al., 2017). This may suggest a marked differentiation in how the public views drug versus alcohol use disorders. Drug use is typically viewed more harshly than alcohol due to social acceptance, accessibility, and legality. This may be due to the proximity of drugs to illegal behavior, as the label of “criminal” has been viewed even more harshly than drug use (Mushtaq et al., 2015). Most people may be able to say they know someone who drinks too much, it is less common to know someone with a drug use disorder. With millions of individuals effected by substance use, this is more likely to be due to concealment due to feared effects of stigma rather than simple lack of encounters with this population. This attitude and the concealment of identity extends the “us versus them” mentality due to lack of familiarity with individuals who have struggled with drug use. This has been shown to lead to elevated feelings of stigma (Witte et al., 2019) and perceptions that those with SUD are immoral, less rational, and naturally exist in tandem with criminal behavior (Yang et al., 2017). Due to the public’s largely negative views on those with OUD and drug use disorders generally, individuals may hide their identity to shield themselves from the effects of discrimination. By doing so, they are often more susceptible to the increasing severity of their diagnosis without treatment.

Impacts of Stigma

Once negative attributes are associated with all members of a group, stereotyping and discrimination often result. One of the most devastating impacts of stigma is that of treatment

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avoidance. When individuals anticipate stigma, they often cope by avoiding institutions or groups where stigma may be enacted. They also can internalize stigma, which often leads to isolation and avoidance of vital services.

A significant number of those seeking treatment have reported the experience of one or more kinds of stigma (Crapanzano et al., 2022). Institutional, social, and self-stigma have all been associated with reduced treatment-seeking and adherence (Crapanzano et al., 2022; Sanders et al., 2013; Frank, 2011). Self-stigma has been linked with greater disorder severity, decreased self-efficacy, lower confidence in recovery, and higher drug cravings. The use of stigmatizing language, such as being referred to as an “addict”, has been related to lower treatment commitment and completion (Grønnestad & Sagvaag, 2016).

Although there are several efficacious treatments for OUD, even they are not immune to the impacts of stigma. In fact, experiences of social and self-stigma have been shown to influence patient’s medication assisted treatment beliefs and adherence (Sanders et al., 2013).

Treatment for OUD

The U.S. Food and Drug Administration has approved several medications for opiate use disorder (mOUD) such as methadone (a full opioid agonist) and buprenorphine (a partial opioid agonist) (Tai et al., 2013). In the literature, these are interchangeably referred to as medication-assisted treatment (MAT), which will be how it is referred to within this text. Both buprenorphine and methadone have established clinical utility, showing significant benefits such as reduced withdrawal symptoms, illicit drug use, mortality, and incidence of communicable diseases such as HIV and hepatitis C, while showing increased employment and treatment adherence rates (The American Society of Addiction Medicine, 2017; Mattick et al., 2014; NIDA, 2021).

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Methadone is a full μ -opioid agonist that must be administered in a certified treatment center by directly observed administration per federal mandates (Matusow et al., 2014).

Methadone maintenance therapy (MMT) was introduced in the 1970's and remains the most readily available medication for OUD (Mattick et al., 2014). It has the longest history of effective treatment but is limited due to the restriction of daily trips to the clinic for dosing.

Buprenorphine (brand names Suboxone or Subutex) is a partial μ -opioid agonist that is typically prescribed in an outpatient office for ongoing maintenance therapy (Matusow et al., 2014). Suboxone has the addition of naloxone, which is an opiate antagonist used to cause precipitated withdrawal when there is misuse (Tai et al., 2013). This combats the issue of diversion and makes it preferable to methadone in some cases (Walker et al., 2018).

Buprenorphine also strongly binds to the μ -receptor without providing the euphoric effects of a traditional agonist. This prevents other opiate medications from being able to attach and provide an effect, which decreases motivation and reinforcement effects (Tai et al., 2013). It is said to have less abuse potential than methadone due to these factors.

There are significant barriers to treatment that an individual might encounter for these evidence-based approaches, including healthcare, insurance, transportation, and financial issues (Walker et al., 2018). Perhaps the most insidious is the potential for factors like stigma to prevent patients from wanting to initiate on lifesaving treatments due to disapproval from friends, family, and healthcare providers. Despite mitigated risk concerns and considerable treatment gains, these medications remain inexplicably controversial.

MAT Stigma

MAT is the standard of care for OUD, but patients are often resistant to initiation and cite stigma as a significant concern (Scorsone et al., 2020; Woo et al., 2017). There is an institutional

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and social level stigma that assumes the choice to initiate on MAT is no different than active drug use (Sharp et al., 2021; Woo et al., 2017). This idea continues despite data showing that these medications often reinforce ongoing psychosocial therapies, require routine urine drug screens, and increase treatment retention (Murphy & Polsky, 2016; Scorsone et al., 2020).

Perhaps due to their proximity to illicit drug use, many still think of these medications as another way to get high or “replacing one drug for another” (Scorsone et al., 2020). Studies investigating MAT stigma showed that 89% of respondents had people in their lives that disapproved of their maintenance therapy (Woo et al., 2017). The most common experiences included family (56%), friends (33%), and healthcare workers (44%). This may be because methadone’s chemical structure mimics other synthetic opioids with full access to the mu-receptor, such as Percocet or Oxycontin. There is a concern that methadone does little to curb concomitant illicit drug use, while buprenorphine is seen as having a more active role in blocking the euphoric effects of full-agonist substances like pain medications or heroin (Woo et al., 2017). Although both have been shown to substantially reduce mortality, methadone patients have been found to have higher rates of overdose than buprenorphine partially due to this ability and a generally more severe profile of opiate use (Bell et al., 2009; The American Society of Addiction Medicine, 2017).

Some medical and 12-step communities also may see MAT as a way to maintain active drug use (Scorsone et al., 2020). This reveals a discouraging truth about community perceptions related to opiate misuse, where those who do choose maintenance therapy are likely to be judged despite sustained abstinence from illicit drugs. This can lead to patients hiding their MAT status from those close to them, despite organizations like Narcotics Anonymous requesting total honesty with peers as a protective factor in sobriety (Scorsone et al., 2020). These divisive elements can lead patients to feel that they are still on the outskirts of society, keeping secrets,

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and taking a medication that no one knows about (albeit one that is taken as prescribed). It is easy to see how this could be traumatic and might mirror the state of active drug use for them, thus being aversive or even increasing risk of relapse. Overall, stigmatizing those who are trying to mitigate the impact of their OUD leads to a revolving door phenomenon and ultimately increases adverse outcomes. This can be especially true for those with intersecting marginalized identities and compounded barriers to treatment, such as women.

Women and Stigma

The opiate epidemic did not spare any one group, but women were especially susceptible to its impacts. Opiate-related deaths have increased by 642% for women, compared to 439% for men since 1999 (NIDA, 2020), and over 15,000 women died from opiate overdose in 2019 (CDC, 2021). This increase in opiate use is due to a multitude of factors that influenced women, such as: higher reported chronic pain, a higher likelihood of receiving prescriptions for opiates for conditions where it has not been shown efficacious (shown especially likely with age), and a higher tendency to be prescribed opiates in combination with other medications such as benzodiazepines, which increases susceptibility to dependence and overdose (Goetz et al., 2021). Women are not only subject to these susceptibility factors, but also experience more acute negative impacts from opiate use. There is research to suggest that women take less time to progress from casual use to dependency and develop more physiological complications with lower use than their male counterparts (Hernandez-Avila et al., 2004; SAMHSA, 2009). Men and women respond disparately to drug-cue imagery, which has been shown to cause greater subjective heroin craving, cardiovascular changes, and reported sadness in women (Back et al., 2005; Yu et al., 2007). Women are also more susceptible to the short- and long-term

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consequences of substance abuse, causing psychiatric, medical, parental, and employment complications.

Not only are there notable differences in the susceptibility for OUD that differ by gender, but also in discrepancies related to stigma. While roughly the same number of men and women are diagnosed with an OUD, only half the number of women seek treatment (Goodyear et al., 2018). This is especially striking because women are more likely to be proactive in seeking help for other mental and physical health issues (Thompson et al., 2016). A synthesis of qualitative research in this area concluded that 97% of studies found that women who use drugs are subject to higher stigma, identified as the most significant barrier to treatment for them (Fiddian-Green et al., 2019, Lefebvre et al., 2020; Madden et al., 2021). The literature on stigma in quantitative research, however, is mixed in terms of gender and stigma. A recent analysis showed that there was no significant association between drug use stigma and gender (Meyer et al., 2021). Some research indicates that men are more likely to be judged negatively for their drug use (Keyes et al., 2010), while women are more likely to receive sympathy, concern, and helping behavior (Wirth and Bodenhausen, 2009). It is possible that there is an ingrained protective and sympathetic mentality toward women who use drugs (Kulesza et al., 2016; Schiff et al., 2022). While there is mixed evidence to support the idea that women are more likely to experience stigma with drug use, this indecision endures only to the point of conception (Stone, 2015; Huhn & Dunn, 2020; Weber et al., 2021). At that point, stigma is highly likely and is reported to be very severe.

Pregnant and parenting women with OUD and stigma

The number of pregnant women with opiate use disorder has greatly increased in recent years. According to the CDC, the number of women with opiate related diagnoses at delivery

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skyrocketed 131% from 2010 to 2017 (2021). Women are most likely to develop a substance use disorder between the ages of 18 to 29, which overlaps with prime fertility and remains at an elevated risk throughout their reproductive years (Prince & Ayers, 2019). This growing population is particularly vulnerable to relapse, stigmatization, and medical mistreatment while commonly dealing with trauma, isolation, psychiatric comorbidities, and resource scarcity.

Stigma is a serious threat to mother's psychological and physical well-being. It has been shown to not only encourage and amplify substance use (Kulesza et al., 2015), but is also cited as a primary reason woman do not seek vital obstetric and substance use services throughout and after gestation (Crawford et al., 2022). Women often manage their risk for detection by skipping appointments, isolating themselves, withholding information, or avoiding treatment to begin with (Stringer & Baker, 2018). There is also evidence to suggest that stigma during pregnancy is linked to post-natal relapse and overdose (Stone, 2015). The impact of stigma on women has been shown to potentiate existing symptoms, play a role in the development of avoidant-coping tactics, and increase risk for lifetime overdose rates (Stone, 2015).

Substance use stigma for women is often connected to concerns about pregnancy, motherhood, and child-rearing. Society tends to place a higher emphasis on women's reproductive roles, and substance use is perceived as a risk to the health and well-being of the woman and her children. There is a perception that these women are rejecting gender normative behavior as protective mothers and caregivers, which elicits a strong emotional response (Schiff et al., 2022; Derkas, 2011). Stereotypes reinforce this idea by assuming those with OUD are self-involved, destructive, and immoral caregivers. This is in direct contrast to what the identity of a mother is expected to look like: selfless, nurturing, and protective (Crawford et al., 2022). Women with children exist between these two prescribed identities, which may cause and

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explain the increased stigma at all levels. These assumptions create the basis for isolation and discrimination that is reported in this population (Crawford et al., 2022). This can perhaps explain the discrepancy between a more sympathetic view of a childless woman versus a punitive attitude toward a mother.

MAT for this population provides improved short- and long-term outcomes and offers a chance at a higher quality of life for women and their families (Phillipi et al., 2021). However, women with children and OUD have significant barriers to obtaining treatment (Feder et al., 2018). Women are often the primary caregiver to their children and take on more household responsibilities, which can mitigate time and resources needed to initiate treatment (Gao et al., 2023; Barnett et al., 2021; Stewart et al., 2007). In addition, lack of childcare and fear of stigma have been cited as the most significant barriers to treatment in mothers, the latter of which is also associated with higher lifetime overdose incidents (Scheidell et al., 2022; Barnett et al., 2021; Elms et al., 2018). Mothers report a fear of reduced medical autonomy, legal involvement, and loss of parental rights due to stabilization on MAT and its implication of illicit drug use (Gao et al., 2023; Schiff et al., 2022). If mothers are able to overcome the significant barriers to seek MAT, they are then shown less likely to be offered MAT by their treating physician despite the association of post-natal support with higher adherence to MAT protocols, increased measures of family stability, and sustained abstinence (Gao et al., 2023; Crane et al., 2019). Given the complexity in identity for mothers with children and OUD who choose to stabilize on MAT, understanding the nuances of stigma for this unique population is vital to better support them.

Predicting Stigma

Research focusing on demographic predictors of stigma in childbearing women with OUD is untouched in the literature. However, certain demographic variables have been

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researched to better understand their predictive ability for stigma within mental health and SUD broadly. There are mixed reports on whether men or women hold higher stigmatizing beliefs toward mental illness (Griffiths et al., 2008; Lauber et al., 2004; Barry et al., 2000; Chowdhury et al., 2000). Similarly, there has been inconclusive information about whether age has any relationship to attitudes toward mental health (Feeg et al., 2014; Griffiths et al., 2008; Pyne et al., 2004; Lauber et al., 2004; Chowdhury et al., 2000). However, there is evidence to suggest that those with lower levels of education, lower income, and those in rural areas tend to have higher negative beliefs about mental health (Adams et al., 2021; Feeg et al., 2014; Girma et al., 2013; Griffiths et al., 2008). These demographic determinants may point to systemic issues such as lower access to education and health care for certain groups that have a trickle-down effect on how stigma is enacted toward substance users.

The lack of certainty in demographic prediction can be due to factors that have been stronger in their predictive ability for stigma, such as social proximity and exposure. A desire for social distance is defined as an unwillingness to interact with those who have SUD (Yang et al., 2017; Marie & Miles, 2008). Social distance desires have been reported toward individuals with SUD due to previously discussed attributions such as dangerousness and immorality (Yang et al., 2017; Marie & Miles, 2008). Research suggests that the higher the attribution of danger or immorality, the greater the desire for social distance. Higher social distancing desires were shown for having an individual with SUD marry into one's family rather than have this individual as a neighbor (Committee on the Science of Changing Behavioral Health Social Norms et al., 2016; Mannarini & Boffo, 2015). Paradoxically, social distance desires are often reduced by contact with marginalized groups (Yang et al., 2017; Marie & Miles, 2008). Exposure refers to the extent to which individuals have experienced contact with someone with

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SUD, which is another significant predictor of stigma. Exposure has been shown to reduce discriminatory beliefs in a variety of stereotyped conditions (Buckwitz et al., 2023; Favre et al., 2023; Kennedy-Hendricks 2017; 2016; Deacon & Boulle, 2007). If individuals do not have anyone in their life impacted by SUD, they are more likely to stigmatize and desire social distance from them. Although there is a lack of research in this area on mothers with OUD, these women often experience self-stigma and self-imposed social distance due to the high stakes involved with their status disclosure. Therefore, individuals have fewer opportunities to have personal experiences with them that would reduce discriminatory and stereotypical beliefs. In order to increase comfort with exposure and promote social proximity in this population, stigma needs to be defined, better understood, and mitigated.

The Current Study

The current study aims to investigate predictors of stigma toward a vignette about a woman who has a child and is stabilized on MAT. The current literature shows an established stigma toward opiate use, medication assisted therapy, and women who are pregnant, but there has been no investigation on views of women with children who are maintained on MAT. It is important to understand the general public's view on this distinction as opiate use treatment becomes increasingly prevalent and issues involved in medication initiation becomes more nuanced with certain populations. This study hopes to provide insight on what characteristics are more or less likely to indicate higher stigma toward a MAT-stabilized mother.

Hypotheses

Based on the literature reviewed above, it is hypothesized that:

1. There will be a positive correlation between the public's perception of general stigma toward those with substance use disorders (as measured by the general Perceived

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- Stigma of Addiction scale) (general PSAS) and stigma specific to a female-focused vignette about substance use and recovery with MAT (as measured by the personal Perceived Stigma of Addiction Scale) (personal PSAS).
2. There will not be an association between mental health stigma (as measured by the Attitudes Toward Mental Illness Questionnaire) (AMIQ) and stigma toward a female-focused vignette about opiate use and recovery with MAT (as measured by the personal PSAS).
 3. Gender differences will be explored as a predictor of stigma toward a woman with OUD stabilized on medication assisted therapy.
 4. The presence or absence of children will be explored as a predictor of stigma toward a woman stabilized on MAT.
 5. Interactions between kids, gender, and general mental health stigma will be explored when predicting stigma toward an MAT-stabilized mother.
 6. The most important predictor of stigma based on the independent variables will be identified.

Chapter II

Methods

Participants

Participants were eligible if they were 18 years old or older, lived in the United States, and spoke English fluently. Exclusionary criteria included individuals who had personal experiences with substance use disorder (including those who have SUD or family members and close friends with SUD), as the aim of the study was to assess stigma of the general public without the influencing effects of anecdotal experience. There were 254 participants included in data analysis for this study. On average they were 36.16 years old ($SD = 12.51$). Complete demographic data participants can be found in Table 1.

Individuals were recruited through Prolific, a newer crowdsourcing research platform that was founded in 2014. Data collection happened in two different phases as a more comprehensive understanding of Prolific's guidelines was gained. The first 38 participants with usable data were recruited through a series of preliminary questions that did not include a Prolific prescreen, but an embedded set of questions to filter ineligible participants out through a Qualtrics survey. Phase one resulted in a large number of individuals being found ineligible (included, $n=35$; excluded, $n=57$).

Given the high number of ineligible individuals and prolific guidelines, an alternate screening procedure was utilized. Phase two contained a pre-screen through Prolific which allowed the PI to identify eligible individuals then invite them to complete the full online survey. Two rounds of pre-screen data collection were run where a total of 1,200 individuals were pre-

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screened for eligibility. This resulted in a total of 589 individuals who would be eligible to participate in the full online survey and these individuals were sent a message on the prolific platform to invite them to participate. In total, 507 individuals provided usable data. The online questionnaire, on average, took 6.01 (SD=4.31) minutes to complete.

A total of 6 individuals were rejected for failure of attention check or not initiating the survey after consent. Commonly used in survey research to identify participants who are not attending to the questions, participants were given attention checks through an infrequency item (“I eat cement every day”) and an instructed response item (Please answer “strongly agree” to this question to indicate you have read the question); Mead & Craig, 2012). If the participants answered attention check items incorrectly, they were excluded from compensation and data analysis. Participants were also excluded if <95% of data is provided.

Participants were compensated through the Prolific platform for completing the survey. This study did not collect identifiable information and any third-party information associated with an individual’s survey account was on Prolific and was only accessible by the vendor. Compensation was in the amount of \$.25 for the pre-screen and \$3.00 for the study for all participants who were eligible and met aforementioned criteria. Participants who did not meet eligibility criteria had their screening data deleted.

Measures

Data on drug use stigma is relatively new in the area of research, and measures used to capture this construct are inconsistent across the literature (Luoma et al., 2013). Once recruited through Prolific, users who read the consent, met criteria, and were interested in participating were guided to an online Qualtrics survey where a demographic questionnaire and several drug use stigma questionnaires were administered.

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Demographics

Participants completed a demographics questionnaire which gathered data regarding their gender identity, age range, race, and number of children (see Appendix A).

Attitudes to Mental Illness Questionnaire

To measure general mental illness stigma, the Attitudes to Mental Illness Questionnaire (AMIQ) (Luty et al., 2006) was used (see Appendix A). In this survey, five items are scored on a one to six scale and the total score is calculated as the sum of all responses, providing a minimum of -10 and a maximum of +10, with positive ten indicating the least stigma.

This measure has established stability, showing robust test-retest reliability and face, construct, and criterion validity in depressive, self-harming, and substance using populations (Luty et al., 2006). This scale has also been used in recent vignette research about MAT stigma (Deng et al., 2022).

The AMIQ's five-items were given to all participants and had a Chronbach's alpha in this population of .69. Limitations of the alpha for the measure in this sample are considered below. The AMIQ will be interchangeably referred to as general mental health stigma.

Perceived Stigma of Addiction Scale

Together with the AMIQ, the Perceived Stigma of Addiction Scale (PSAS) was administered to distinguish drug use stigma from general mental health stigma, (Luoma et al., 2011) (see Appendix B). This eight-item-scale measures prevalence of stigmatizing beliefs toward substance use, where a higher score indicates a more frequent negative attitude toward those with substance use issues. This scale is scored using a four-point Likert scale ranging from strongly disagree to strongly agree, where a final scale is composited ranging from 8 to

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32. Higher scores are indicative of greater stigma in the test taker (Luoma et al., 2011). There are several items that are reversed scored to reduce straight-line responding.

This scale has established adequate face validity, construct validity, and internal consistency (Luoma et al., 2011; Tuliao & Holyoak, 2022). It has also been positively correlated with stigma associated with seeking help for mental health issues and attitudes about risk for treatment seeking (Tuliao & Holyoak, 2022). This measure has been used in stigma research about addiction relating to methadone maintenance, which showed requisite construct validity and reliability (Stockton et al., 2021). This scale was used in its original form to capture how individuals think most people would feel about someone with a substance use disorder. It was also used in a modified format for use in this study to understand how participants personally feel after reading each vignette by changing the format to first person.

The PSAS was given in the two described iterations, hereby referred to as personal PSAS (indicator of personal feelings of stigma toward SUD) and general PSAS (indicator of what people think most feel toward SUD (see Appendix B). Both versions had 8-items and were given to all participants, resulting in a Cronbach's alpha of .87 (personal) and .78 (general). These provided evidence of adequate reliability in this sample.

Procedure

Prior to data collection, this study was reviewed by the IRB and approved. Once participants met inclusionary criteria and answered the demographic questionnaire, they were given the PSAS to assess how they think most people feel about certain aspects of drug use. Participants were then randomized to a treatment condition (women with children or women with no children) where they were shown a vignette describing a woman followed by a modified version of the PSAS and the Attitudes to Mental Illness Questionnaire (AMIQ) (see Measures).

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This process was repeated with a second vignette and the same survey items. Vignettes, which were based on work by Deng and colleagues (2022), can be found in Appendix D.

Two hypothetical individuals were described in the vignettes based on which child-status group the participant was randomized to. One group described vignettes which were both about women who have a child, but their preferred substance use treatment differs. One was described as opting for medication assistance (MAT) as her treatment of choice, while the control vignette attends Narcotic's Anonymous (NA) meetings. The other group included women who did not have children and had differing SUD treatment paths. Respondents were given a briefing on what treatment typically looks for both MAT and 12-step treatment to ensure that participants are informed before proceeding with their opinions on each hypothetical description (See Appendix C). After completing the two vignettes and related questionnaires, participants were thanked for their participation, debriefed (see Appendix E), and directed back to Prolific to be compensated

It should be noted that the data that is being used in this study is a subset of data from the larger study that utilized four-vignettes (see Appendix D). Participant recruitment and completion occurred as described above, however, during data collection, there was an error in Qualtrics's recording process that caused the second PSAS to overwrite the initial survey. Although the PI made several attempts to reach out to Qualtrics technical help to ensure successful randomization and survey set up, the data were not recoverable resulting in only usable data on only two of the vignettes (the data that was usable was not comparable as they were from different randomized conditions). Based on the literature reviewed above and the available data, study hypotheses were developed to explore the predictors of stigma for MAT toward women with children.

Chapter III

Results

Before running any analysis to test the study hypothesis, data were screened and checked for normalcy. There was only one missing data point on one measure, which was replaced using mean item replacement. There were 22 (general PSAS), 17 (personal PSAS), and 15 (AMIQ) univariate outliers. There were 18 multivariate outliers, 16 of whom were univariate on at least one scale and were deleted. The remaining univariate outliers were windsorized to maintain sample size.

For the purpose of analysis, the categories of education, gender, and race were recategorized. Gender (male and female) and race (white and non-white) were dichotomized, while education was broken into three groups (some college or lower, college educated, and graduate education). Although data was initially collected to capture a more diverse array of ethnic and gender identities, 66.1% of this sample identified as Caucasian and a majority identified as male (50%) and female (43.7%). Given that a majority of the sample had graduate education (16.5%), college education (45.7%), or some college experience (18.9%), the remaining categories were a minority. To better compare groups, the categories were broken down to three larger categories (for demographic breakdown see Table 1).

While age was not found to significantly correlate with any measure of stigma, there was a statistically significant difference between education groups when measuring general stigma ($F(2,71.5) = 3.76, p < .05$). A Tukey post-hoc test revealed that those individuals in who had a high school diploma, GED or some college rated significantly lower general stigma ($M=21.78$,

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$SD=3.02$) compared to the college-educated group ($M=22.97, SD=3.29$). There was no statistical significance between any other levels of education for any other measures of stigma. An independent samples t-test was run and indicated that the general SUD stigma did not show significant between group differences ($-.329(252) = 4.178, p = .371$). However, the AMIQ, $t(252) = 2.01, p < .05$, and personal PSAS did show between group differences, $t(252) = -2.63, p < .01$. On the AMIQ, Caucasians ($M = 2.33, SD = 2.43$) were shown to rate significantly less stigma than their non-white counterparts ($M=1.70, SD=2.29$). On the personal PSAS, Caucasians ($M=16.65, SD=4.26$) were shown to rate stigma significantly lower than their non-white counterparts ($M=17.90, SD=3.13$).

To test the first hypothesis (the association between general and personal stigma), a Pearson's bivariate correlation was conducted. As can be seen in Table 3, general and personal beliefs about stigma were correlated, $r = .180, p < .01$. However, general mental health as measured by the AMIQ ($M=2.12, SD=2.40$) did not correlate significantly with either general or personal PSAS scores.

To address the relationship between gender and types of stigma in this sample, an independent samples t-test was run. Results indicated that there were no significant differences found between groups, however, the personal PSAS did approach significance, $t(236) = 1.91, p = .057$, with women ($M=16.71, SD=3.80$) rating lower stigma in this index than men ($M=17.67, SD=3.90$). General PSAS, $t(236) = 1.002, p = .317$, and AMIQ, $t(236) = .193, p = .343$, were not statistically significant between men and women.

To analyze whether there was a difference in kinds of stigma in those with and without children, an independent samples t-test was run. The personal PSAS showed significant group differences, $t(200) = -3.50, p < .001$. For this measure, those with one child or more indicated

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higher stigma ($M=19.06$, $SD=3.57$) than those who had no children ($M=16.53$, $SD=3.88$). Due to these results, a post-hoc test was run to see if questions pertaining to children were significant. An independent samples t-test comparing child status groups and their views on questions specific to children on the PSAS (items 3 and 4) was run (see Appendix B). Analyses revealed between group differences for the personal iteration of item three, $t(252)=-3.70$, $p < .001$, and four $t(252)=-3.61$, $p < .001$. For item three, those without children ($M=2.42$, $SD=.71$) rated significantly lower on stigma than those with children ($M=2.78$, $SD=.79$). For item four, those without kids ($M=2.35$, $SD=.72$) showed significantly lower rated stigma than those with children ($M=2.70$, $SD=.74$).

Several moderation analyses were performed to test the covariates of gender, child-status, or general SUD stigma to predict personal stigma. Preliminary analyses were conducted to ensure there were no violations of the assumptions of normality, linearity, and homoscedasticity. In each of these models, the main effects were put into step one and the interaction effects in step two. The first regression was calculated to predict personal PSAS scores based on AMIQ scores and child-status. Child-status and AMIQ did not report a significant proportion of variance in personal PSAS scores, $R^2=.040$, $F(3,250)=3.434$, $p=.457$). A second hierarchical multiple regression was used to predict personal PSAS based on AMIQ and gender. Gender and AMIQ did not report a significant proportion of variance in personal PSAS scores, $R^2=.018$, $F(3,234)=1.398$, $p=.244$). A final hierarchical multiple regression was tested to predict personal PSAS based on general PSAS and AMIQ scores. General PSAS and AMIQ did not report a significant proportion of variance in personal PSAS, $R^2=.033$, $F(3,250)=2.822$, $p=.894$).

A simultaneous-entry multiple regression analysis was used to test if measures of stigma via general PSAS, AMIQ, and child-status significantly predicted participant's ratings of

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personal PSAS. The results of the regression model with three predictors produced $R^2=.069$, $F(3, 271.031)=6.147$, $p < .001$. As seen in table 4, general PSAS ($Beta= .177$, $t(253)=2.897$, $p<.01$) and child-status ($Beta=.190$, $t(253)=3.109$, $p<.01$) were statistically significant predictors to this model, while AMIQ was not ($Beta=.026$, $t(253)=.427$, $p=.670$). Part and partial correlations can be seen in table 4. The largest contributor to personal SUD stigma was child-status (3.72%), followed by general PSAS (3.24%) and AMIQ (.0289%).

Chapter IV

Discussion

The misuse of opioids has led to a significant public health crisis characterized by rising rates of dependence, overdoses, and devastating societal consequences. Those with OUD have faced stigma historically and continue to be discriminated against whether in or out of treatment.

This stigma often exists within institutional and social spheres, and leads to strong feelings of self-stigma within those impacted. Corrigan's attribution model conceptualizes the presence and intensity of this stigma toward SUD through themes of dangerousness, blameworthiness, contagion, treatability and immorality (2003). As a result, individuals may feel isolated, ashamed, and reluctant to seek treatment, which can further perpetuate the disorder, lead to lower treatment seeking, and impact efficacy of outcomes (Luoma, 2011). This can be especially true with marginalized groups such as women, those with children, and those who take medication in the context of recovery. This study was about the interlap between these identities with the hope to gain a better understanding of how mothers stabilized on MAT are seen by the general public and gain insight about predictors of stigma.

The data used for this study included a sample of younger, majority Caucasian, and highly educated men and women. Due to these factors, demographic categories were dichotomized with the exception of education, which was broken down into three groups. Our analyses showed that age as a predictor did not have a relationship to rated stigma in any of the three surveys, which is consistent with others studies (Griffiths et al., 2008; Robb et al., 2010).

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However, education was a significant predictor, showing that college educated participants were more likely to think that the general SUD stigma would be higher than their peers with less education. It has also been shown that those with less education are more likely to have experienced drugs and alcohol compared to those with higher education (Wills et al., 1995). Given this, it could be that those who come from a lower educational background may be immersed in an environment where drug use is more commonplace than those with higher education, aligning with the idea that familiarity reduces stigma (Kennedy-Hendricks et al., 2022; Yang et al., 2017; Marie & Miles, 2008). Since the general PSAS was an indicator of what most people think, these results may also imply that those who are college educated have had more exposure to media, research, or literature about substance use stigma. With high relapse rates reported for OUD and the common association with drug use and illegal activity, individuals could deduce that most people would associate these behaviors with deviance (Chalana et al., 2015; Strain, 2002).

Examination of ethnicity also showed significant differences, indicating that white participants rated general mental health (AMIQ) and personal OUD stigma (personal PSAS) for the vignette lower than other ethnicities. There were no significant differences for general SUD stigma (general PSAS) between ethnicities. Asians (13.4%), Hispanic (7.5%), and black (7.1%) participants were the highest identified ethnicities in the non-white categorization in this study. These results are consistent with prior research demonstrating that black, Asian, and Hispanic communities generally show a less positive attitude about mental health treatment than their white counterparts (Latalova et al., 2014; Jang et al., 2011; Conner et al., 2009; Atkinson & Gim, 1989). The erasure of all identities under the umbrella of “non-white” is an unsophisticated way to look at ethnicity and its influence on stigma. Factors such as generational trauma, medical

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distrust, and reduced access to resources that are associated with minority status can account for some of the discrepancy in views of general mental health and opiate use.

Research suggests SUD is typically seen as distinct from other mental health conditions (Yang et al., 2017; Mushtaq et al., 2015). This is partially because substance use tends to be seen as a mental illness with a sense of culpability due to an individual's initial choice to either use or deny drugs. Those without a more researched point of view on the development of SUDs may assume that lack of self-control is indicative of character rather than drug-induced neuroplasticity. Results concurred with these prior findings as the measure of general mental health beliefs (AMIQ) was not found to correlate with either personal OUD stigma (personal PSAS) nor projected SUD (general PSAS) stigma. The interaction between covariates was also explored when predicting stigma toward the mother in the vignette. Results indicated that General PSAS accounted for a significant amount of variation in personal PSAS, but AMIQ did not. Our results may suggest that general beliefs about SUD significantly predict personal OUD beliefs in MAT stabilized women with children. This may provide evidence for the idea that mental illness is distinctive from both substance use and opiate use more specifically. However, general and personal PSAS were also correlated, suggesting that personal OUD beliefs and predicted beliefs about SUD were related. This may be understood in a similar way to social stigma impacting individual level stigma. Prevailing societal attitudes toward SUD could influence personal beliefs about OUD by supplying a normalized environment that is discriminatory toward these diagnoses on the social and institutional level.

This study did exploratory analyses to understand gender as a predictor of stigma toward the vignette. The analyses revealed only marginally significant results suggesting that women had lower ratings of personal opiate use stigma (personal PSAS) than their male counterparts.

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There were no significant differences in SUD stigma for general substance use (general PSAS) or mental health stigma (AMIQ). The literature suggests that gender being predictive of substance use stigma are unclear at best, with many conflicting results reported depending on outcome measures (Griffiths et al., 2008; Lauber et al., 2004; Barry et al., 2000; Chowdhury et al., 2000). (Loffler et al., 2023). Characteristics such as gender and age may not be the strongest predictors of stigma due to the evidence supporting Corrigan's attribution model (2003) and relevant predictive factors such as social proximity and distance (Yang et al., 2017; Mushtaq et al., 2015). Those engaging in activities such as crime and drug use may inspire feelings of fear and blame (Yang et al., 2017; Mushtaq et al., 2015; Schomerus et al., 2011), which promotes an "us versus them" mentality, especially for those who have not had contact with individuals with OUD (Crapanzo et al., 2018). Individuals may feel a more visceral disapproval toward opiate users and less of a connection toward the commonalities they may have with the vignette (such as gender). They may also have pre-existing associations of dangerousness and blame based on social and institutional stigma. This is often maintained by the news, media, and literature that endure regardless of age or gender, underscoring Corrigan's attributions of how stigma is perpetuated.

Child-status was explored as a predictor of the three kinds of stigma. Our results suggested that those with children were more likely to have stigmatizing feelings about the mother with OUD in the vignette, but not about general mental health or substance use. When looking at items on the PSAS associated with teaching or being in charge of children, this idea was further underscored by those with children endorsing higher personal feelings of stigma toward the vignette. The interaction between kids, gender, and general mental health stigma was also explored when predicting stigma toward the MAT-stabilized woman in the vignette. Our

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results indicated that child-status was the most significant predictor to personal OUD stigma, followed by general SUD stigma. This emphasizes the connection of stigma at the institutional and societal level impacting personal beliefs about opiate use disorder. This shows that child-status was the greatest predictor of negative feelings toward mothers with OUD who are taking MAT. Mothers who struggle with substance use may be seen as especially deviant given their perceived failure to live up to social expectations (Crawford et al., 2022). Women with OUD may represent assumptions of immorality, dangerousness, and selfishness that are contrary to how mothers are typically viewed in our society (Schiff et al., 2021; Yang et al., 2017; Kennedy Hendricks 2017, 2016; Corrigan et al., 2003). It was found that those with a child rated questions about caretaking or teaching with significantly higher stigma than those without children. The same concept of protection and nurturance that mothers with OUD are judged for is likely what is fueling higher stigma toward an educator or caregiver with such a history. Parents may feel a sense of superiority and anger that they are able to balance the difficulties of their lives without drug use, while the vignette was not able to do so. There may also be a sense of trepidation about the high relapse rates for OUD, often described as a chronically relapsing condition. With relapse rates as high as 88% after 36 months (Chalana et al., 2015; Strain, 2002), parents may feel the cost of trust is too high when dealing with their children's health and well-being. Due to the vignette's inability to take care of her son at one time due to drugs, this may be interpreted as a similarly "stained" reputation as a fit mother or caretaker. This suggests that her own societally sanctioned duty to nurture and protect her child was neglected, which may be interpreted to parents as a moral failing and inability to be relied on. Another implication to consider is that of stigma and abstinence. The vignette in this study was described as being abstinent from illicit drugs for several years. However, stigma toward her in the context of caretaking and childcare

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were significant. Research suggests that even after prolonged abstinence, the impacts of substance use stigma tend to linger (Lee & Boeri, 2017; Link et al., 1997).

Strengths and Limitations

One notable strength of this study was data collection within the general population. Many studies in the stigma literature have focused on college-student's views or patient's self-stigma (Brown et al., 2015; Feeg et al., 2014; Latalova et al., 2014; Luoma et al., 2013; Corrigan et al., 2009a, 2003, 2001a, 2001b). By sampling within the general population, a better understanding of how stigma can be approached by those who are unaffected by substance use may be gained without the mitigating effects of exposure. This is especially relevant given information suggesting that those with a lack of knowledge and experience about a disorder tend to have higher stigmatizing beliefs, including higher fear and avoidance (Ross & Goldner, 2009).

Another strength was that this study was able to collect several indicators of stigma to compare, adding to the growing literature showing a distinction between mental health and substance use beliefs. Further, the study was specific to a vignette of a mother stabilized on MAT who was several years abstinent from illicit opiates. This stage in a mother's life in stigma research is not well-researched, as a majority focus remains on pregnancy (Crawford et al., 2022; Schiff et al., 2022; Zedler et al., 2016; Stone, 2015). It is important to learn more about this unique population's needs as they transition from weekly gynecological and substance use visits to much more infrequent care while balancing the new identity of being a mother, responsibility of a newborn, and continued necessities of recovery. New parents are at higher risk of relapse in the year after giving birth due to factors such as sleep deprivation, lack of social support, increased responsibility, and postpartum pain and depression (Rankin et al., 2023). Therefore, a better

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understanding of this population can help provide information about how to support the multi-faceted aspects of their identity.

This study also had several limitations to consider. Despite the search for a broad array of participants, the participant pool tended toward majority demographics. The better part of this sample was white and well-educated. This may be due to the use of the crowdsourcing platform, and more generally online data collection, which limits participants to those with a computer who have knowledge of technology. This limits the generalizability of our results.

Further, the study design lacked a comparison group, which limited our ability to draw strong conclusions. Future research may focus on comparing women with OUD to different treatment groups to better compare how stigma varies between them. By doing so, more nuanced conclusions can be gathered about how stigma is enacted in perinatal mothers diagnosed with OUD.

Another limitation to consider was the AMIQ's low reliability coefficient. This may be because of the differing perspectives of the questions posed, switching between a first-person point of view and one that asks more generally if the woman in the vignette might be impacted. For example, someone might be comfortable having someone with an SUD over for dinner, but could still conceivably believe that having a history of drug use would damage her career due to knowledge of socially normative attitudes. Although this measure has been used in SUD-related vignette research and is reported to have good psychometric properties, there is no gold standard for comparing stigma measures (Luty et al., 2006). Therefore, the conclusions drawn about the AMIQ are limited and must be considered in the context of these psychometric properties.

Future research

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It would be beneficial to focus on the public's view of women with children who are in recovery and how they are viewed due to ongoing stigma. The findings of this study suggest further questions about women and caregiving expectations as well as the lingering mark of stigma post-abstinence. Future research might focus on the general public's views of perinatal women before and after knowledge of diagnosis and recovery. Information about how long stigma lingers for mothers' post-abstinence would be valuable to collect to understand if this thinking is black and white or reduces as a function of time. Lastly, it would also be helpful to understand how Corrigan's attributions (2003) contribute to views of women with OUD, with and without children, to understand how children mediate the relationship to stigma in relationship to these variables. This may provide additional insight on whether these attributions are more strongly related to stigma due to women's status as a mother.

Clinical implications

In this study, substance use was shown to be a distinct category in recognition of stigma when compared to other mental illnesses. The implications of this align with early views of drug use, with substance use centers existing outside of the traditional medical care. This divisive mindset has continued to the present, although certain barriers such as insurance coverage and access to clinics has improved. Despite this, the view of substance use as dangerous, immoral, untreatable, disease-prone, and blameworthy has a heavy toll for those impacted. Self, social, and structural stigma have all been associated with poor outcomes for SUD treatment (Yang et al., 2017; Committee on the Science of Changing Behavioral Health Social Norms et al., 2016). For parenting women with OUD, this is especially severe. Due to the shame involved with these overlapping identities, treatment avoidance is common and puts the mother and child at risk (Crawford et al., 2022; Stone, 2015; Terplan et al., 2015; Friedman et al., 1998).

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The Committee on the Science of Changing Behavioral Health Social Norms (2016) proposes evidence-based strategies to reduce stigma related to SUDs. These strategies encompass literacy programs, advocacy, contact-based initiatives, media campaigns, and peer support. Exposure and psychoeducation are shown to be particularly effective in diminishing stigma by engaging the public to increase awareness and knowledge about SUD. In order to make impacted individuals comfortable enough to surpass fears of status-exposure and self-stigma, a social level change is necessary. This can begin with small, everyday interactions, such as the choice to use less-stigmatizing language when talking about substance users. It must also happen at the level of large, institutional-level change and policy reform. Medical professionals are individuals with significant influence who can provide proper education, screening, and intervention. Re-evaluating punitive laws stemming from structural stigma is vital to combatting OUD discrimination in the face of the opiate epidemic. The aim is for individuals impacted by substance use to share their experiences and reshape perceptions, thereby lessening the perceived harm and immorality associated with substance use through personal connections and understanding. Through these means, it is hoped that individuals are able to speak out and provide a different narrative about the unique challenges of OUD in the context of motherhood. By doing so, the perceived dangerousness and immorality associated with these intersecting identities may be dampened through personal connection and compassion.

It could also be beneficial to implement psychoeducation about gender differences, MAT, and the impact it has on recovery statistics. Current media depictions of OUD tend to be bleak and focus on sensationalism. A focus on different types of individuals impacted by OUD can help change the narrative and provide a more varied sense of what recovery can look like. MAT adherence can reduce relapse rates by up to 10 times, and studies show sustained abstinence in

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up to 75% in some populations at a 1-year follow up (Velandar, 2018). Overcoming MAT stigma and providing more context about its benefits can help instill confidence in an individual's ability to recover. This can combat the perception that MATs are equivalent to illicit drug use, which could increase the number of individuals with OUD who consider MAT, and decrease the number of individuals in their lives that stigmatized this decision. There is also a need to provide psychoeducation at the institutional level, as medical providers remain unclear about the utility of this life-saving medication. Providing more information about the biological, psychological, and social aspects of substance use development and the benefits of treatment could instill confidence in the general public and those needing treatment. This could be a first step in addressing societal and self-stigma, while also changing the publicly held attributional beliefs about substance use such as dangerousness, contagion, blameworthiness, treatability and immorality.

Tables

Table 1.
Demographic Characteristics of the Sample

Gender Identity	N	%
Male	127	49.6
Female	112	43.8
Non-binary	8	3.1
Transgender	3	1.2
Gender non-conforming	2	.8
Prefer not to identify	4	1.6
Ethnicity		
Caucasian	170	66.4
Black	18	7.0
Hispanic	19	7.4
Native American	5	2.0
Asian	34	13.3
Mixed Race	7	2.7
Would prefer not to say	2	0.8
Other	1	0.4
Education		
Did not complete high school	15	5.9
High school or GED	22	8.6
Some college	48	18.8
College	118	46.1
Master's degree	42	16.4
PhD/MD/DO/JD or equivalent	10	3.9
Prefer not to say	1	0.4
Number of Children		
None	169	66.0
One	34	13.3
Two	38	14.8
Three	11	4.3
Four	3	1.2
Five or more	1	0.4

Note. For analyses involving Gender Identity, Ethnicity, Education, and Parental Status several categories needed to be collapsed based on distribution.

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Table 2.

Measure Means and SD for Measures of Stigma

Measure	Mean	SD
PSAS (general)	22.43	3.09
PSAS (personal)	17.04	3.89
AMIQ	2.13	2.45

Note: PSAS=Perceived Stigma of Mental Illness Scale; AMIQ=Attitudes Toward Mental Illness Questionnaire.

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Table 3.
Correlations for Measures of Stigma

		GenPSAS	AMIQ	PersPSAS
General PSAS	Pearson	1	.020	.180**
	Correlation			
	Sig. (2-tailed)		.750	.004
	N	254	254	254
AMIQ	Pearson	.020	1	.017
	Correlation			
	Sig. (2-tailed)	.750		.787
	N	254	254	254
Personal PSAS	Pearson	.180**	.017	1
	Correlation			
	Sig. (2-tailed)	.004	.787	
	N	254	254	254

*Note: PSAS=Perceived Stigma of Mental Illness Scale; AMIQ=Attitudes Toward Mental Illness Questionnaire. **= $p < .01$.*

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Table 4.

Regression Analysis for Covariates Predicting Personal Feelings of Substance Use Stigma

Model		Unstandardized		Standardized		Correlations			
		Coefficients	Std. Error	Coefficients	t	Sig.	Zero-order	Partial	Part
1	(Constant)	9.839	1.882		5.228	<.001			
	AMIQ	.043	.101	.026	.427	.670	.017	.027	.026
	General PSAS	.224	.077	.177	2.897	.004*	.180	.180	.177
	Child-status	1.584	.510	.190	3.109	.002*	.191	.193	.190

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a. Dependent Variable: Personal PSAS

*Note: PSAS=Perceived Stigma of Mental Illness Scale; AMIQ=Attitudes Toward Mental Illness Questionnaire. **= $p < .01$. *= $p < .05$.*

APPENDICES

Appendix A: Attitudes to Mental Illness Questionnaire (AMIQ)

Instructions: Please read all the questions carefully and circle the option that suits your opinion best.

1. Do you think that this would damage this woman's career?

Strongly agree⁻²/Agree⁻¹/Neutral⁰/Disagree⁺¹/Strongly disagree⁺²/Don't know⁰

2. I would be comfortable if this woman was my colleague at work.

Strongly agree⁺²/Agree⁺¹/Neutral⁰/Disagree⁻¹/Strongly disagree⁻²/Don't know⁰

3. I would be comfortable about inviting this woman to a dinner party.

Strongly agree⁺²/Agree⁺¹/Neutral⁰/Disagree⁻¹/Strongly disagree⁻²/Don't know⁰

4. How likely do you think it would be for this woman's partner to leave her?

Very likely⁻²/Quite likely⁻¹/Neutral⁰/Unlikely⁺¹/Very unlikely⁺²/Don't know⁰

5. How likely do you think it would be for this woman is to get in trouble with the law?

Very likely⁻²/Quite likely⁻¹/Neutral⁰/Unlikely⁺¹/Very unlikely⁺²/Don't know⁰

Appendix B: Perceived Stigma of Addiction Scale (General)

PSAS

Please read each statement carefully and circle the number below the item that indicates the degree of your agreement or disagreement with each statement. Please use the scale below, and please do not omit any item.

1. Most people would willingly accept someone who has been treated for substance use as a close friend.

1 2 3 4
Strongly disagree Disagree Agree Strongly agree

2. Most people believe that someone who has been treated for substance use is just as trustworthy as the average citizen.

1 2 3 4
Strongly disagree Disagree Agree Strongly agree

3. Most people would accept someone who has been treated for substance use as a teacher of young children in a public school.

1 2 3 4
Strongly disagree Disagree Agree Strongly agree

4. Most people would hire someone who has been treated for substance use to take care of their children.

1 2 3 4
Strongly disagree Disagree Agree Strongly agree

5. Most people think less of a person who has been in treatment for substance use.

1 2 3 4
Strongly disagree Disagree Agree Strongly agree

6. Most employers will hire someone who has been treated for substance use if he or she is qualified for the job.

1 2 3 4
Strongly disagree Disagree Agree Strongly agree

7. Most employers will pass over the application of someone who has been treated for substance use in favor of another applicant.

1 2 3 4
Strongly disagree Disagree Agree Strongly agree

8. Most people would be willing to date someone who has been treated for substance use.

1 2 3 4
Strongly disagree Disagree Agree Strongly agree

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Perceived Stigma of Addiction Scale

Personal belief

Please read each statement carefully and circle the number below the item that indicates the degree of your agreement or disagreement with each statement. Please use the scale below, and please do not omit any item.

1. I would willingly accept someone who has been treated for substance use as a close friend.

Strongly disagree / Disagree / Agree Strongly / agree

2. I believe that someone who has been treated for substance use is just as trustworthy as the average citizen.

Strongly disagree / Disagree / Agree Strongly / agree

3. I would accept someone who has been treated for substance use as a teacher of young children in a public school.

Strongly disagree / Disagree / Agree Strongly / agree

4. I would hire someone who has been treated for substance use to take care of their children.

Strongly disagree / Disagree / Agree Strongly / agree

5. I think less of a person who has been in treatment for substance use.

Strongly disagree / Disagree / Agree Strongly / agree

6. I would hire someone who has been treated for substance use if he or she is qualified for the job.

Strongly disagree / Disagree / Agree Strongly / agree

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7. I would pass over the application of someone who has been treated for substance use in favor of another applicant.

Strongly disagree / Disagree / Agree Strongly / agree

8. I would be willing to date someone who has been treated for substance use.

Strongly disagree / Disagree / Agree Strongly / agree

Appendix C: OUD Treatment Information

Recent reports have stated that when people want to stop using prescribed or illicit opiate drugs, they may engage in some kind of help. Some people use medications, while others prefer psychosocial support. The following are common ways someone may engage in treatment:

1. Narcotics Anonymous (NA) is a 12-step program that was born from the success of Alcoholics Anonymous for those who are recovering from substances other than solely alcohol. Regular attendance is generally associated with improved outcomes. NA programs are abstinence oriented and foster a network of healthy social support for individuals in recovery.
2. Medication assisted therapy (MAT) refers to medications such as methadone or suboxone. These are medications given to those who are physically dependent on illicit or prescribed opiates who want to work toward recovery. Both medications help manage cravings, withdrawal symptoms, but do so more slowly than traditional opiate drugs, which reduces their potential for abuse. This making them ideal for use in long-term treatment of opiate use disorder.

Appendix D: Vignettes

- Woman with child taking MAT: Alisha is a 30-year-old female with an opiate use disorder. Five years ago, she was dependent on heroin and gradually lost interest in other activities in life. Because of her drug use, she lost her job and her ability to take care of her son. Three years ago, she went to the clinic and was put on a medication for opiate use disorder. In the past 3 years, she has taken her medication on time, not used heroin, sustained her employment and takes care of her son.
- Woman without child taking MAT: Alisha is a 30-year-old female with an opiate use disorder. Five years ago, she was dependent on heroin and gradually lost interest in other activities in life. Because of her drug use, she lost her job. Three years ago, she went to the clinic and was put on medication for opiate use disorder. In the past 3 years, she has taken her medication on time, has not used heroin, and is able to sustain her employment.
- Woman with child going to NA meetings: Maya is a 30-year-old female with an opiate use disorder. Five years ago, she was dependent on heroin and gradually lost interest in other activities in life. Because of her drug use, she lost her job. Three years ago, she started attending narcotic's anonymous meetings regularly. In the past 3 years, she has attended NA meetings regularly, not used heroin, sustained her employment, and takes care of her son.
- Woman without child going to NA meetings: Maya is a 30-year-old female with an opiate use disorder. Five years ago, she was dependent on heroin and gradually lost interest in other activities in life. Because of her drug use, she lost her job. Three years ago, she started attending narcotic's anonymous meetings regularly. In the past 3 years,

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she has attended NA meetings regularly, has not used heroin, and is able to sustain her employment.

Appendix E: Patient Debriefing Form

Thank you for your interest or participation in the opiate use disorder study.

We hope that by exploring how people perceive those with opiate use disorder we can understand certain group's unique treatment needs when navigating recovery.

This is provided as a reminder that should your participation in this project lead to a desire to seek additional services, you may contact any of the agencies listed below.

Psychological Services

US National Suicide Prevention Lifeline Call 1-800-273-TALK (8255);

En Español 1-888-628-9454

Crisis Text Line: Text “HELLO” to 741741

Canada Suicide Prevention 1-833-456-4566

Canadian crisis Text: Text message to 45645

Substance Use Services

SAMHSA National Helpline Confidential free help, from public health agencies, to find substance use treatment and information. 1-800-662-4357

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