Research paper
Co-use of methamphetamine and opioids among people in treatment in Oregon: A qualitative examination of interrelated structural, community, and individual-level factors

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A R T I C L E   I N F O

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A B S T R A C T

Background: Rates of methamphetamine use and methamphetamine-related deaths have increased steadily in the United States in recent years. Methamphetamine is increasingly present in opioid-related deaths. An initial study of de-identified urine specimens (n = 102) collected at a drug treatment program between 2017 and 2018 indicated that 61% of specimens contained methamphetamine; of the specimens containing methamphetamine, people were, on average, five years younger than those who tested negative for methamphetamine; and non-fentanyl opioids were more than three times as common in methamphetamine positive specimens. The National Drug Early Warning System (NDEWS) Coordinating Center initiated a HotSpot Study to assess whether there was an emerging dynamic in the area, or if enhanced data collection could give insights into the co-use of methamphetamine and opioids.

Methods: A qualitative study, grounded in principles of rapid ethnographic assessment and a social science/anthropological framework was conducted and used methodological complementarity to contextualize results from the initial urinalysis study. Targeted sampling was conducted at two treatment sites. Program staff and patients were recruited to participate in focus groups and semi-structured interviews to assess structural, community, and individual-level factors impacting methamphetamine and opioid co-use.

Results: Within our broader framework of structural, community, and individual-level factors intersecting co-use, our data yielded three sub-themes: 1) the circulation of stigma regarding methamphetamine use was consistently described by both patients and staff and this intersected structural changes in treatment policy and suggested compounded stigma; 2) community-level factors and temporality were important for understanding patterns of methamphetamine use and for further interpreting the initial urinalysis; 3) patient rationales regarding the co-use of methamphetamine and opioids included strategies to mitigate the harms of heroin, as well as to detox or titrate the effects of heroin.

Conclusion and Implications: Using an ethnographically-oriented and social science/anthropological approach and methodological complementarity to contextualize the initial urinalysis study demonstrates how behavioral variables cannot be abstracted from larger socio-structural and community contexts which impact people's decision-making process regarding co-use of methamphetamine and opioids. Further, by grounding our analysis in the meaning-centered and experiential narratives of people who use drugs, our research demonstrates the importance of considering the expertise of people who co-use opioids and methamphetamine as central for informing future sustainable program planning to address co-use that also accounts for the interrelationship between structural, community, and individual-level factors.

Introduction

According to the Centers for Disease Control and Prevention, overdose death rates involving psychostimulants have been increasing steadily since 2010. In 2017, overdose involving psychostimulants increased by 37 percent from the previous year (Centers for Disease Con-
trol and Prevention 2018). Provisional data from January to June indicates that drug overdose deaths increased in 2019 in the United States (O’Donnell, Gladden, Mattson, Hunter, & Davis, 2020). Further, these data indicate that of those overdose deaths reported, nearly one third (32.6%) involved opioids and stimulants and 12.7% involved stimulants without opioids (O’Donnell et al., 2020). As researchers, frontline providers, and people who use drugs (PWUD) continue to analyze and respond to the complexities of the overdose crisis in diverse local contexts, many are theorizing a “4th wave” (Cicccarone, Mars, Rosenblum, & Unick, 2019; Enos, 2019) of the overdose crisis in the U.S., adding stimulants to the historical trajectories of street heroin, prescription opioids, and fentanyl. Because stimulant use is seen as a resurging issue nationally and key variable in the continuing U.S. overdose crisis, qualitative research can help to contextualize emerging data on this potential “4th wave” and also illuminate the nuances associated with methamphetamine and co-use with opioids that preliminary data suggests could have a role in nearly one third of overdose deaths reported in 2019.

In this article, we outline findings from a qualitative study using rapid ethnographic assessment methods (Sangaramoorthy & Kroeger, 2020; Vindrola-Padros & Johnson, 2020) to contextualize and deepen our understanding of a previous urinalysis study of people in treatment (n = 103) that showed that 61% of patients entering a medically supported withdrawal program had used methamphetamine. This urinalysis study took place as part of the National Drug Early Warning System (NDEWS) Coordinating Center at the University of Maryland (UMD), which was in operation from 2014–2020. One mandate of NDEWS when housed at UMD was to track potential emerging drug trends and conduct “Hotspot” site visits when data on emergent drug phenomena was reported to the Coordinating Center. The initial findings piqued questions about a potential emerging drug hotspot with respect to methamphetamine use. This analysis seeks to use methodological complementarity (Greene, Caracelli, & Graham, 1989; Lopez et al., 2013) to contextualize those findings within unique, locally relevant structural, community, and individual-level factors (Sangaramoorthy & Kroeger, 2020) and to investigate the experiences, motivations, and outcomes related to methamphetamine and opioid co-use, by centering the perspectives of PWUD in a local context.

Background

Increase in stimulant use nationally

Opioid overdose in the United States has continued to garner widespread attention, yet drug toxicity and mortality caused by other drug types has evolved with shifts in drug supply and trends in polysubstance use (Kariisa, Scholl, Wilson, Seth, & Hoots, 2019). Rates of methamphetamine use and methamphetamine-related deaths increased 54% in the U.S. between 2011 and 2016. In 2016 alone, there were a total of 6762 deaths that involved methamphetamine in the U.S., more than 20% of which also involved heroin (Hedegaard, Bastian, Trinidad, Spencer, & Warner, 2018). In 2017, psychostimulants were involved in 14.7% of all overdose deaths nationally and approximately half of these overdose deaths also involved opioids (Kariisa et al, 2019). In the first half of 2018, the majority of opioid deaths nationally co-occurred with a non-opioid drug and 12.1% co-occurred with methamphetamine specifically (Gladden, O’Donnell, Mattson, & Seth, 2019). Visits for drug overdoses involving psychostimulants with and without an opioid present have also increased in recent years with important regional differences (Artigiani, Hsu, McCandlish, & Wish, 2018). From 2015 to 2016, the rate of psychostimulant overdose emergency department (ED) visits with an opioid increased 5.9% and the rate of psychostimulant overdose ED visits without opioids increased 18.9% (Hoots, Vivolo-Kantor, & Seth, 2020).

In the U.S., the West and Midwest have seen increasing rates of methamphetamine-involved deaths (Kariisa et al., 2019; Seth, Scholl, Rudd, & Bacon, 2018; Control and (CDC), 2019; Banta-Green & Hood, 2019). In Oregon, for example, drug-related deaths where methamphetamine was present in toxicology results have been steadily increasing from 81 deaths in 2012 to 272 deaths in 2018 (Oregon Health Authority, 2020). Additionally, in 2018 methamphetamine was involved in 45% of accidental heroin related deaths and heroin was involved in 31.6% of accidental methamphetamine related deaths statewide (Oregon Health Authority, 2020).

Motivations for methamphetamine and opioid co-use

The rise in deaths from methamphetamine toxicity and the increasing presence of methamphetamine in opioid related deaths point to a growing polysubstance landscape in the U.S. (Kariisa et al., 2019). Emerging patterns in states like Oregon suggest the importance of considering the overlapping morbidities and mortality as the co-use of stimulants and opioids trends upwards (Lancet, 2018). Although polysubstance use has always existed among people who use drugs, recent increases in the co-use of opioids and methamphetamine has become a growing concern (Ellis, Kasper, & Cicero, 2018). Several studies have found that the co-use of stimulants and opioids can be attributed to the desire for an enhanced high, to balance the effects of each individual drug, and to manage symptoms of withdrawal (Cicero, Ellis, & Kasper, 2020; Ellis et al., 2018; Hoots et al., 2020; Strickland, Havens, & Stoops, 2019; Wang et al., 2017).

In a study of patients entering drug treatment across the United States (n = 13,521), over half of participants reported that they engaged in the co-use of methamphetamine and opioids for an enhanced, synergistic, or more euphoric high (Ellis et al., 2018). Participants also noted that the synergistic high allowed them to balance the effects of each drug and function more normally. Another qualitative study (n = 11) found that among people on methadone maintenance, methamphetamine was used for self-medication, for detoxification, and to offset methadone side-effects like impaired sexual performance (Shariatirad, Maarefmand, & Ekhtiar, 2013). Methamphetamine has also been reported to enhance motor activity, improve attention and concentration, and improve social skills (Shariatirad, Maarefmand, & Ekhtiar, 2013; Meacham et al., 2016).

Cost and availability also contribute to substitution of preferred drugs with cheaper options (Chalmers, Bradford, & Jones, 2010; Horyniak et al., 2015; Strickland et al., 2019). Due to supply reduction efforts and tighter regulation of prescription opioids, methamphetamine has become, at times, more accessible than opioids (Ellis et al., 2018; Strickland et al., 2019). An individual’s desire to use their preferred drug may change in order to manage use and prevent withdrawal (Ellis et al., 2018; Strickland et al., 2019). A study conducted in Australia (n = 688) found that in the years immediately following a heroin shortage, there was a reduction in injection initiation with heroin and an uptake in methamphetamine use (Horyniak et al., 2015).

Methamphetamine use among people seeking treatment

Data indicates that there have been increases in methamphetamine use among people seeking treatment for opioid misuse nationally (Ellis et al., 2018; Gladden et al., 2019; Jones, Underwood, & Compton, 2019). National treatment admissions reported between 2008 and 2017 shows that the percentage of primary heroin treatment admissions that also reported use of methamphetamine increased each year from 2.1% in 2008 to 12.4% in 2017 (Jones et al., 2019). Similarly, national data show the prevalence of past month methamphetamine use among individuals entering treatment for opioid use disorder has been increasing across geographic regions and demographics since 2012.
(Severtson et al., 2019). Data from a sample of 39,312 people entering 31 different treatment facilities in the U.S. from 2012 through 2018 show that the number of people reporting past month use of methamphetamine increased from 402 in 2012 to 1166 in 2018 (Severtson et al., 2019). Notably, in 2018, past month use of methamphetamine was highly associated with past month heroin use and past month injection use of an opioid (Severtson et al., 2019). In addition, polysubstance use has been linked to poorer treatment engagement and treatment outcomes (Wang et al., 2017).

**Public health impacts of methamphetamine and opioid co-use**

The combination of depressant and stimulant drugs places immense pressure on the cardiovascular, respiratory, and central nervous systems, which puts people who use drugs at greater risk for negative health consequences, including death (Al-Tayyib, Koester, Langegger, & Raville, 2017; Meacham et al., 2016). Stimulants counter the effects of opioids and allow for people to tolerate larger doses of opioids initially (Meacham et al., 2016). However, the effects from stimulants dissipate more quickly than the effects from opioids, thus, co-use can result in increased overdose risk by both respiratory suppression and cardiac arrest (Meacham et al., 2016). Research indicates that people who engage in polysubstance use are at increased risk for drug dependence and fatal overdose, are more likely to engage in risky behaviors, have higher rates of comorbidities, and have poorer mental health and treatment outcomes (Al-Tayyib et al., 2017; Jones et al., 2019; Meacham et al., 2016, 2015; Meacham, Roesch, Stratchdee, & Gaines, 2018; Roth et al., 2015; Schneider et al., 2020; Tsui et al., 2020; Wang et al., 2017).

Polysubstance use has also been associated with high-risk sexual behaviors, high-risk injection behaviors, and increased risk for blood borne disease transmission (Al-Tayyib et al., 2017; Jones et al., 2019; Lancet, 2018; Meacham et al., 2016; Roth et al., 2015). In one study conducted in the United States–Mexico border region (n = 1311), people who co-injected heroin and methamphetamine were more likely to have engaged in transactional sex and to have used drugs before or during sex (Meacham et al., 2016). Additionally, participants were more likely to report having difficulty obtaining sterile syringes and that they were in urgent need of help with their drug use (Meacham et al., 2016). In this study, co-injection was associated with syringe sharing and purchasing prefilled syringes (Meacham et al., 2016).

Studies have also shown that people who engage in polysubstance use have higher rates of comorbid medical or psychiatric conditions (Herbeck et al., 2013; Wang et al., 2017). In particular, methamphetamine has been associated with higher rates of psychosis, depression, suicidality, and anxiety (Jones et al., 2019). Data also indicate that people who engage in polysubstance use have higher rates of mental health symptoms, poorer physical health, and greater criminal justice involvement (Herbeck et al., 2013). Despite considerable research regarding methamphetamine and methamphetamine/heroin co-use, there is still a dearth of research that examines co-use qualitatively from the perspectives of people who use drugs, beyond individual behavioral variables to include an analysis of how structural and community factors impact co-use.

**Initial study: potential drug use dynamic**

In March 2019, the Center for Substance Abuse Research at the University of Maryland released a report describing findings from an enhanced analysis of urine specimens from patients admitted to a medically supported withdrawal program that was part of a drug treatment program in Oregon (Billing, Artigiani, Hippolyte, & Wish, 2019). De-identified urine specimens (n = 103) collected between December 2017 and February 2018, as part of a Drug Early Warning Signals study (see Billing et al., 2019), underwent laboratory testing for an expanded panel of drugs and indicated: 1) 61% of specimens contained methamphetamine; 2) methamphetamine positive specimens came from people who were, on average, five years younger than those who tested negative for methamphetamine; and 3) non-fentanyl opioids were more than three times as common in methamphetamine positive specimens than in methamphetamine negative specimens. Given these unexpected findings and the emergent data on national trends indicating rising methamphetamine and opioid co-use, the National Drug Early Warning System (NDEWS) Coordinating Center initiated a HotSpot Study at this treatment program. HotSpot studies were regularly carried out by NDEWS at UMD in order to conduct rapid research in a specific locality, when findings of interest were reported to the Coordinating Center. These site visits typically lasted 2–5 days and allowed for enhanced data collection to further interpret previous findings. The NDEWS Coordinating Center determined that it was necessary to assess whether there was an emerging dynamic with respect to methamphetamine and opioid use in the area, or if enhanced data collection could give insights into the original findings, which had since become a phenomenon of national interest.

**Methods**

A qualitative study was designed by first author López, a medical anthropologist, and conducted over two days in June 2019. The study was conducted at the same program as the initial urine analysis study, which has two sites. López and co-author Howe, each who have approximately two decades of research and/or front-line experience working with people who use drugs, conducted all study activities. The study had the following aims:

**Aim 1:** To assess the experiences, motivations, and outcomes related to methamphetamine and opioid co-use from the perspective of people who are currently using drugs or former users

**Aim 2:** To assess the experiences, motivations, and outcomes related to methamphetamine and opioid co-use from the perspective of staff providers who engage with people who use drugs or people in treatment

Study design and sampling methods used principles of rapid ethnographic assessment, with the aim of using qualitative methodologies to examine structural, community, and individual-level factors (Sangaramoorthy & Kroeger, 2020) related to methamphetamine and opioid use. Our goal was to use methodological complementarity (Greene et al., 1989; Lopez et al., 2013) to further explicate findings from the original urinalysis. The methods selected were consistent with previous research with PWUD, which supplements existing data with the emic perspectives of people who use drugs, which are not always immediately accessible because of experiences of social marginalization and stigma (Lopez et al., 2013).

Authors López and Howe worked with leadership to conduct targeted sampling (Kral et al., 2010; Watters & Biernacki, 1989) of patients (n = 9) and staff (n = 18) at two sites with knowledge or experience of methamphetamine and opioid co-use. Eligibility requirements for patients were: 1) 18 years of age or older; 2) a self-reported history of methamphetamine and/or opioid use; and 3) enrolled in the program at either site. Eligibility requirements for staff were: 1) 18 years of age or older; 2) staff member at one of the two program sites; and 3) knowledgeable about methamphetamine and opioid use in the community.

For the purposes of this study, being knowledgeable about methamphetamine and opioid use in the community meant being a treatment provider/counselor to people who use both methamphetamine and opioids and/or having lived experience with methamphetamine or opioids in the community where the study was conducted. We had a strong collaborative partnership with the Director of Medical Services who facilitated the prior urinalysis study and this rapport enabled us to recruit study participants. All patients who were referred to the study by program staff self-reported prior co-use of methamphetamine and opioids. The rationale for including both patients and staff was driven by our broader methodological aim of capturing structural, community, and individual-level domains impacting the co-use of methamphetamine and opioids.
The study design included focus groups, with instruments designed to probe about community and contextual variables related to methamphetamine and opioid co-use. In addition, the study design included individual semi-structured interviews, in order to probe about individual-level experiences, motivations, and outcomes as they manifested within structural and community contexts and to supplement focus group data. The study design also included focus groups and individual interviews with staff in order collect data on structural and community factors impacting drug use for patients who enroll in this program. Staff participation in the study was considered imperative as staff would be able to comment on patterns of drug use among patients over time and to contextualize their work within broader local contexts.

Over the course of our site visit, we conducted three focus groups, one with patients (n = 6) and two with staff (n = 12). We also conducted individual in-depth, semi-structured interviews with patients (n = 3) and staff (n = 6) purposefully sampled because of their knowledge about methamphetamine and opioid use in the community. Both the focus groups and individual interviews were conducted using semi-structured interview methodologies (Bernard, 2017). We used semi-structured interview guides that were oriented around structural, community, and individual-level domains (Sangaramoorthy & Kroeger, 2020); however, we also iteratively followed up on new domains of inquiry that participants introduced during the focus groups and interview, consistent with best practices in qualitative methodology (Bernard, 2017). Individual, semi-structured interviews were conducted using an ethnographic orientation to data collection—meaning that lived-experience and meaning-centered narratives were considered fundamental to understanding motivations regarding the co-use of methamphetamine and opioids. Thus for individual interviews with both patients and staff, a semi-structured approach was used, following the interview guides; however, when a participant introduced important new domains during the interview, unstructured interviewing techniques were used in order to iteratively collect data about that domain. This approach allows for richly detailed personal experiences or “emic” or “insider” perspectives—including elements of life history as it relates to drug use history—to be centered in data collection. This approach is particularly methodologically important when collecting data with populations who have intersecting vulnerabilities or are stigmatized, such as people who use drugs and whose range of experience may not be immediately represented in the semistructured interview guide (Lopez et al., 2013).

The staff interviews proved to be an essential element of data collection because many staff were in long-term recovery, local to the area, and also had insights about the history and social issues which intersected recent local drug patterns. Focus group participants were provided refreshments as compensation. Patients participating in one-on-one interviews were provided $25 compensation. All interviews were audio recorded and transcribed by a professional transcriptionist. Data were analyzed by first author López, using thematic analysis and principles of grounded theory (Bernard, 2017; Corbin & Strauss, 2014). Initial broad codes for the analysis of data were drawn from our theoretical and methodological frameworks of rapid ethnographic assessment; thus, data were initially organized by the codes of structural, community, and individual-level domains (Sangaramoorthy & Kroeger, 2020). Next, within those broad codes, data were further inductively categorized into salient sub-themes (Corbin & Strauss, 2014; Bernard, 2017). Finally, based on the inductively created themes that emerged from the second phase of coding, three particularly evocative case studies, drawn from individual interviews with patients were analyzed in-depth (Baxter & Jack, 2008; Stake, 1995). These case studies exemplified aspects of our initial framework of structural, community, and individual-level factors as well as provided further explanation, from the meaning-centered perspectives of PWUD, how individual decision making regarding co-use happens within the context of structural and community factors.

All study activities were approved by the Institutional Review Board at the University of Maryland, College Park (UMCP #1300187–2). Consistent with the mandates of NDEWS to monitor emerging drug use issues and report findings in a timely manner, first author Lopez released a preliminary gray literature report, which is publicly accessible (Lopez, 2019). It should be noted that although there was approximately a 15-month time difference between the original urine sample study and the qualitative study, and that therefore, patient data from the original study and the qualitative follow up are not linked, we see a scientific value for the qualitative follow-up. First, patients enrolled in the qualitative study were able to provide important insight into the ongoing social context for methamphetamine and opioid co-use in the local geographic area. Second, all staff that were enrolled in the qualitative study had been employed at the program continuously since the original urine sample study. Thus, staff were able to provide key retrospective data on structural and community dynamics impacting the treatment program. These two forms of data sources yielded results that could not otherwise have been captured and fill gaps pertaining to the original study findings.

Results

Within our broader framework of structural, community, and individual-level factors impacting co-use, our data yielded the following sub-themes, which we will explicate below: 1) the circulation of stigma regarding methamphetamine use was a consistent theme described by both patients and staff and this intersected changes in state drug treatment policy (structural-level); 2) community-level factors were important for understanding patterns of methamphetamine use and for further interpreting the initial urinalysis data (community-level); and 3) participant rationales regarding the co-use of methamphetamine and opioids included strategies to mitigate the harms of heroin, as well as strategies to detox or titrate the effects (individual-level). In order to protect participant confidentiality, we are not attaching participant demographics to specific quotations from the focus groups. Individual interviews were conducted where greater confidentiality was possible and are therefore more easily anonymized. We have noted which data come from individual interviews with either patients or staff.

Compounded stigma: structural issues impacting experiences with co-use of methamphetamine and heroin

Patients and staff expressed that multiple forms of stigma were a common experience, both inside and outside of treatment. From a social science/anthropological theoretical perspective, stigma is considered a structural dynamic because it is rooted in broader systems of power and inequities that eventually shape individual health experience (Farmer, 2001; Farmer, Sen, & Sen, 2005). Patients described their experiences of stigma as happening in treatment contexts and health care settings, including emergency rooms, and between peers. One patient described that there is heightened stigma for people that use methamphetamine: “You kind of feel sorry for the opiate addict like, ‘Oh, they have pain, and they’re covering it up. They’re not hurting anybody. They’re just sitting there.’ Whereas meth, it’s like ‘That’s a psychotic person. That’s a dangerous, insane person.’” Patients also described that this stigma could impact their ability to access emergency care. One shared: “I have seen people locally turned away because they’re meth users from emergency care in a life-threatening situation that wasn’t related to their meth use. It’s heartbreaking.”

Stigma also intersected state policy changes and shaped the experiences of people accessing treatment in Oregon. There had recently been a state-wide mandate to offer access to medication assisted treatment (MAT), even in what had historically been abstinence-focused programs. These structural shifts impacted intimate negotiations in the treatment context. Staff and patients were now finding themselves in a new shared space in group therapy, where some patients were on MAT and others were not. This imposed an interpersonal dynamic where patients on
MAT were subject to judgement or critique from other patients regarding their “clean time.” One staff participant reported: “I’ll have guys that call out other guys that they’re in the same recovery house. They really know each other. They’ve been living together for six months and all this stuff. And say, ‘I have a concern for you. My concern is that I really hope you can get off Suboxone. I don’t want to see you on it indefinitely…’ You’re not really clean because you’re still on this thing.”

Staff also observed that as the policy was implemented and more people initiated MAT, their methamphetamine use increased because they were no longer able to experience an opioid high. One staff member explained: “…I think something we noticed when we started prescribing a lot of Suboxone…people’s meth use went up because they still wanted to get high. Now they couldn’t do opiates, so then they started doing meth.”

Community dynamics and social context: place and time matters

During the focus groups at both sites with staff, interviewees were concerned with collecting data through an ethnographic framework on any community-level factors that might have influenced the original urinalysis findings. Urine samples in the prior study were collected between December 2017 and February 2018; therefore, interviewers probed about any unique temporal circumstances or events in this time-frame. Staff at the inpatient facility identified that, in fact, the patient population at that time had shifted because the facility temporarily accepted patients whose treatment was covered under a state-funded healthcare plan. This publicly-funded patient population was atypical for the facility, whose patients usually had private insurance or paid out of pocket. Staff reported that this new population had complex service needs including histories of homelessness and trauma and were from a particular geographic area in Southern Oregon. Because coverage under the state healthcare plan was only in effect for a punctuated amount of time, this patient population was at the treatment facility temporarily, coinciding with the period in which urine samples were collected and underwent enhanced analysis.

Further, staff participants suggested that the regional dynamics of methamphetamine use in the Southern part of the state could be linked to the physical demands of the logging industry and/or recent declines of availability of work in that industry, prompting people to turn to drug dealing or more recreational use of methamphetamine. The Hotspot study was designed to capture these important temporal and community-level variables. This temporally-specific shift in patient population suggests the importance of qualitatively parsing out the population covered under the state health plan and further investigating a community perception that the Southern part of the state was particularly impacted by intergenerational methamphetamine use and labor issues that impact drug patterns.

Individual-level strategies: methamphetamine as harm reduction

Emic/meaning centered-responses from patients elucidate some of the individual-level motivations, experiences, and outcomes regarding co-use. Four key individual-level domains, centering the lived experiences of PWUD, emerged: 1) methamphetamine as a safer alternative drug to heroin; 2) methamphetamine as a strategy to detoxify or to titrate impacts of heroin; 3) the financial benefit of methamphetamine to maintain a high; and 4) easy access to purchasing heroin and methamphetamine in combination.

Methamphetamine as safer alternative drug to heroin

Staff and patients described a local perception that methamphetamine could be a safer alternative to heroin for continued drug use. Staff recounted that the treatment population was recently impacted by a spike in overdose deaths—approximately two dozen patients. Thus, there was a collective memory and trauma related to that loss. One staff member recalled: “I’ve treated guys in my groups that had half a dozen friends that had overdosed by the time they were 25 years old.” The staff person continued: “Most of those young men are starting to use meth with heroin as this way to come down a little bit and not over-dose, because there were so many young people overdosing.”

One patient shared: “I think when I was using, it was just the possibility of overdose that comes with heroin, and with meth you’re just going to get really weird. But in that delusional state…that did seem like the safer alternative for me…” Another patient described the shift from using heroin to methamphetamine as feeling like a safer option to manage one’s overall drug use initially, but that it could often lead to co-use: “…I think a lot of people who start out with heroin feel like meth is a, for some reason, safer alternative. So they go, ‘Well, I’m not doing heroin anymore, but I can start doing meth.’ And then they end up wanting the heroin still, so they end up doing them both.”

Methamphetamine as a strategy to detoxify or titrate the effects of heroin

Patients also shared their personal strategies for using methamphetamine and heroin in combination, based on their own expertise in managing their drug use to mitigate harm. One patient used methamphetamine to ease the effects of opioid withdrawal:

“[Stopping heroin] This needs to happen. I don’t want to stop doing drugs. So I’m going to try to do as much of this [methamphetamine] as possible to stay up past the point where I feel like I’m going to die [from heroin withdrawal]. And then you lose some days in there, and then all of a sudden you’re off heroin.”

Another patient described using methamphetamine to help manage her husband’s heroin withdrawal when nothing else was available:

“My husband was an opiate addict. He never really got too deep into heroin, thank god, but oxycodone—six years. We started using it [methamphetamine] more because when he was coming down and withdrawing off of heroin…we couldn’t get any pills. I would go ‘Here you go so you’re not so sick.’ And then of course I took it [methamphetamine] along with him. But that’s how I usually see meth and I think that heroin and meth pretty much go hand-in-hand.”

Other patients described that they consciously used methamphetamine to titrate the effects of heroin, to maintain functionality for work or other routine activities: “…It’s not so bad. I can do a little meth to go to work in the morning. At least I’m not injecting heroin.” Staff reflected on the practice of strategically combining methamphetamine and heroin in order to avoid withdrawal, while staying functional: “I think it’s a functional situation. ‘I can’t be completely out of it.’ So they’re doing the speedballing or the mixing that they can do to get themselves functional but at the same time be under the influence of opioids.” The opposite effects of methamphetamine and heroin proved useful to manage everyday activities or mental health. One staff member recounted:

“I’ve seen them do both where it’s they do speedballs, goofballs, whatever you want to call it. And I’ve seen where—I’ve heard people say that they use heroin and they needed a pickup, so they would do meth, and vice-versa. In my personal experience, I would do heroin, and I would need something to get me up and be productive—if you want to call it ‘productive’—and reduce my anxiety. I’ve also heard a lot of people detoxing off heroin and they use meth…”

Other reasons reported by patients for using methamphetamine and heroin in combination were that it was very easily accessible in the area and could be purchased together: “Dealers almost giving meth away. You buy heroin and you get meth more easily—less times you have to pay for it.” Further, for other patients, using the drugs together was a financial consideration to extend or enhance one’s high. When probed about motivations of co-use, one patient expressed that the primary reason was: “Financially, probably, because you get higher, and if you mix heroin with meth, it gets a little cheaper for the high.”
Participant case studies: experiences and motivations for co-use

We present three case studies below in narrative form, drawn from individual interviews, in order to elucidate the linkages between structural and community-level factors that impact patients’ decision-making processes with respect to co-use. All participant names are pseudonyms.

**Case Study 1: Using Methamphetamine to Help Boost High**

Robert is a 27-year old white man, who had been using heroin and methamphetamine in combination since 2016. Before this, his primary drug of choice was alcohol. Robert began co-using when he met his partner—they identified as sober for approximately one year before they started to use in combination. Over the course of the last three years, Robert said that he only used methamphetamine occasionally and that he had considered heroin his primary drug of choice. In the two months prior to the interview, he had transitioned to using methamphetamine and heroin together every day, by injecting heroin and smoking methamphetamine. He explained:

“So for me, the thing that’s gotten me up every day, you know—heroin is what I’ve been desperate to get. And meth has kind of been nice to throw in the mix when it’s available. I think pretty much every dealer I’ve ever known or worked with or sold for does both. Most of the time they’re both [sold] in little plastic baggies.”

Robert had been warned to be cautious about fentanyl in the local drug supply: “Every time I’ve gotten it, that I’ve known it’s been in there, the person told me ‘like hey, be careful. Just do an eighth of what you normally do because this will kill you’...I have taken that advice pretty seriously.” Because of this advice and Robert’s increasing tolerance for opioids, he said that methamphetamine had become essential in order to help boost his high. This had become his primary motivation for using both drugs:

“I ended up relying on meth a lot more because I wasn’t getting high so much off of heroin anymore. You know, because with heroin you get to the point fairly quickly if you’re using a lot consistently, where it stops working as well as it did before. Or obviously build a tolerance and you don’t really feel so much like you’re getting high anymore. But later on, it was more like, you know, do a shot of dope and get well and be good. But then I’m not really high. So then I would a little while later start doing more meth just to try to add something to that...but the same thing happens with meth where it’s not as effective. So yeah, I kind of went from, you know, both going together, being really intense, to me trying to use meth to just make—do a little extra something because neither of them are working all that well.”

**Case Study 2: Using Methamphetamine to Function Daily**

Jackie is a 24-year old white woman who had been using various drugs since the age of 13. She explained that she had been around drugs consistently since her teenage years because her partner was a drug dealer and would routinely “front” her drugs (i.e., give her drugs that she did not have to pay for immediately). Methamphetamine, heroin, and benzodiazepines were all her drugs of choice. She explained her reasoning for using drugs in combination and the challenges of managing detoxification:

“The streets I would try to get off heroin and smoke meth instead, but then it was always giving me too much anxiety and panic attacks. And then I’d use the heroin and I’d be too sleepy and then use the meth...I’ve always hated it, but I used it to stay awake so I could drive and work. But detoxing off meth was hard because it was never just meth. It was always the heroin too.”

Jackie further explained that using the drugs in combination was an effort on her part in order to achieve a level of functionality needed to perform everyday tasks:

“My goal of using heroin was to nod out. Which it’s why it’s super triggering that people can nod out [in group therapy where others are on MAT]. But I still had to function and go to work and drive and I’d be rolling down the windows and smacking myself trying to wake up to drive. So then that’s when themeth came in and it bounced me out to a sense. The meth would, you know, make your heart race, make you not hungry, make you awake. So it kind of had the reverse effect of the heroin, which is why I used them together. But everyone I knew that did heroin always did meth too.”

Jackie also suggested that not having an equivalent of MAT for her methamphetamine use was a challenge while engaging in treatment: “So, I went to treatment this last time, it was mostly just for meth...and I remember being jealous that the heroin users had Suboxone. So, I was super jealous that people could have that and it helped with withdrawal.”

**Case Study 3: Routine Use of Methamphetamine and Heroin**

Jeff is a 28-year old white man who described having three years of “clean time” before his recent relapse. Before checking himself into the treatment program, he was on a six-month run of continuous and consistent use. During this run, co-use was his primary mode of ingestion, with particular health challenges for him. He described:

“There would be days when I would be completely dope, sick, pocket full of heroin and not meth, and I would not use just heroin. I would wait and wait and wait until I could find meth to combine them. And I feel like combining them made me a whole different slave to it. And it was weird things. Like, I never picked my face before when I used heroin. Never picked my face before when I used meth. When I use them together, I just destroy my body...I like just doing heroin. But combined, I just feel like there’s nothing else on this—it’s like the most evil thing on this planet, is those two combined.”

Jeff also explained that he would use heroin to “come down” or to manage the overstimulation from methamphetamine:

“That’s why I don’t like shooting up meth. Because I feel like every time, I overamp. And then I’m immediately just weird, delusional. So, what got me into using last time was I was doing a lot of meth by myself, which I absolutely hated. But I needed to use. So by the end of about four or five days, it was like ‘Okay, I need to go to sleep now and feel normal.’ So I was like ‘I’m going to pick up some heroin and sleep it off.’ Anytime I do meth by itself, I don’t stop using it unless I have heroin.”

**Implications: towards an examination of interrelated structural, community, and individual-level factors that shape co-use**

This qualitative HotSpot study revealed structural, community, and individual-level factors regarding methamphetamine and opioid co-use that help to better interpret the initial results from the urinalysis study conducted between December 2017 and February 2018. Our research was initially guided by the broader mandate to explore whether there was an emerging dynamic regarding the co-use of methamphetamine that, consistent with the NDWES broader objectives, would warrant continued surveillance of an emerging drug trend. Beyond this initial mandate, our research elucidates several broader contextual issues that are important to consider for deeper understanding of a possible emerging drug use phenomenon. Further, our rapid ethnographic approach, as well as our social science/anthropological theoretical lens illuminates the value of a holistic ethnographically-oriented approach to understanding drug dynamics, which centers meaning and experience of PWUD and asserts that structural, community, and individual level-factors are always deeply interrelated.

Our findings are consistent with recently published behavioral-oriented research on the co-use of methamphetamine and opioids, which suggests that recent methamphetamine use has increased among opioid users seeking treatment (Ellis et al., 2018) and that PWUD are employing a variety of strategies in their co-use to manage their high, balance effects of each drug, or respond to their symptoms of opioid withdrawal (Cicero et al., 2020; Ellis et al., 2018; Hoots et al., 2020; Palmer, Scott, Dietze, & Higgs, 2020; Strickland et al., 2019; Wang et al., 2021).
2017). However, our anthropological and ethnographically-oriented approach also demonstrates how behavioral variables, such as the co-use of methamphetamine and opioids, cannot be abstracted from larger sociostructural and community contexts, with may include structural dynamics such as changing drug treatment access policies, temporal circumstances, and regional dynamics which impact the broader risk environment (Fast, Kerr, Wood, & Small, 2014; Rhodes, 2002) in which people who co-use methamphetamine and opioids reside.

Patients in our study described the nuanced ways in which people who co-use methamphetamine and heroin experience stigma—reliant on broader dynamics of stigmatization of methamphetamine users—both in and out of treatment settings. As MAT was implemented in treatment programs after the policy mandate in Oregon, people had to negotiate judgement regarding perceptions of what constitutes “clean time” during treatment in the context of MAT. Further, people who use methamphetamine expressed frustrations about not having access to an MAT equivalent to manage their treatment. From an anthropological perspective, stigmatization enacted towards PWUD in everyday settings points to deeper dynamics of structural violence that deepen health inequities by contributing to lack of access to compassionate and non-judgmental care within multiple health care arenas (Lopez, 2020, 2018). Our study adds to existing literature on forms of stigma by theorizing beyond individualized self-stigma to include other dimensions such as “public or social stigma,” or discrimination and devaluation by others, and “structural stigma” (Livingston, Milne, Fang, & Amart, 2012; Pattyn, Verhaeghe, Sercu, & Bracke, 2014) that circulates as “common sense” discrimination against PWUD within institutions like the healthcare and treatment systems. Because of our holistic, ethnographically oriented approach, which sees structural, community, and individual level-factors as deeply interrelated, our findings suggest that when centering the emic perspectives of PWUD, stigma is experienced as compounded and permeates different domains of one’s live, including institutional, clinical, and interpersonal relationships. This is consistent with emergent frameworks on stigma, which see stigma as a “global crosscutting framework” intersecting multiple levels of experience (Stangl et al., 2019).

Our study also illuminates the importance of considering community-level factors when assessing the initial findings from the urine analysis study. Community-level included policy changes with respect to billable insurance coverage that contributed to a temporary change in the treatment population. At the time the urine samples were collected, a treatment population with state-funded coverage that largely resided in the southern region of the state, likely contributed to the original study findings. This provokes further questions about whether there is a hot spot area in that southern region that warrants further investigation. Further, staff participants suggested that the changing logging industry in that southern region could be related to patterns of increased methamphetamine use. These are community-level variables that were otherwise unknown in the initial study and were garnered through methodological complementarity (Greene et al., 1989; Lopez et al., 2013). Thus, these findings provoke the question about how to continually monitor and incorporate community-level needs into treatment program design.

Finally, our study provides insight into how people make decisions regarding co-use of methamphetamine and opioids, driven by personal harm reduction strategies. Some participants perceived methamphetamine as a safer alternative to heroin and staff suggested that this perception could be partially driven by personal experiences with overdose and a spike in overdose deaths locally. For others, using methamphetamine was an important strategy to detoxify from heroin, to titrate heroin, or to manage daily tasks related to work and home life while using heroin. These decisions were all made in order to mitigate some form of harm in their lives, such as overdose risk, risk for overamping on methamphetamine, or the ability to manage withdrawal, mental health, or daily tasks needed to survive. These findings are consistent with recent literature on methamphetamine use (Cicerò et al., 2020; Ellis et al., 2018; Hoots et al., 2020; Palmer et al., 2020; Strickland et al., 2019; Wang et al., 2017). Our ethnographically-oriented approach, and in particular the case study narratives, demonstrate the carefully considered strategies that PWUD use to manage their daily lives and to reduce harm related to methamphetamine and opioid co-use. Therefore, the experiences, agency, and expertise of people who use methamphetamine and opioids should be valued and considered in the development of programs and strategies to serve this population. Consistent with other research, the agency and desires of people who use methamphetamine are important individual-level factors in mitigating drug-related harm (Lorvick et al., 2012). Indeed, this person-centered approach to methamphetamine and opioid co-use continues to gain traction in community-based harm reduction programming (Vital Strategies, 2020), and our study contributes insights into how structural and community-level factors intersect individual decision-making that may be useful in tailoring outreach, treatment modalities, and strategies for reducing harm in local contexts and during emergent drug use patterns.

Our findings should also be considered in context of the following limitations. This study has a small sample size and is therefore not representative of all clients at these programs, nor are findings generalizable to other populations, geographic locations, or all patients enrolled in this program. This limitation is mitigated by the fact that our approach is aligned with best practices in qualitative research and draws from well-established principles of rapid ethnographic assessment (Sangaramoorthy & Kroeger, 2020; Vindrola-Padros & Johnson, 2020). Another limitation is that the study relied on purposeful sampling over a two-day site visit and patients interviewed were not the patients who were enrolled in the program at the time of the initial urinalysis. Nonetheless, by conducting in-depth interviews with staff and patients, we were able to collect important contextual information about drug use in the area, patterns that took place within the patient population, and to better understand what appeared to be a common practice of co-use. We therefore provide a multi-level snapshot of co-use within a geographic location as well as key retrospective data on social dynamics in the treatment program that impacted the treatment context between late 2017 and 2019. These data were essential to understand the results of the original urinalysis. These findings suggest that both qualitative and quantitative research with people in and out of treatment may be warranted to capture more diverse experiences and more insight on geographic-specific variables that are important to measure as well as dynamics in the co-use of methamphetamine and opioid use over time. Overall, we found that conducting the rapid ethnographic HotSpot site visit using methodological complementarity contributed a scientific “value-added” (Lopez et al., 2013) to our prior study. Our findings demonstrate that data cannot be interpreted in a vacuum, but rather demonstrate how the interrelationship between structural, community, and individual-level factors are essential to understanding a potential emerging wave of methamphetamine and opioid co-use.

Declaration of interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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