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“Stories of starting”: Understanding the complex contexts of opioid misuse initiation

Noelle E. Spencer, MSc^{a,b}, Simone P Taubenberg, PhD^a, Raisa Roberto, BA^a, Lauren Sealy Krishnamurti, PhD^a, Judy C. Chang, MD, MPH^{a,c}, Karen Hacker, MD, MPH^{d,e}

^aMagee-Womens Research Institute, Pittsburgh, Pennsylvania, USA

^bUniversity of Pittsburgh Graduate School of Public Health, Pittsburgh, Pennsylvania, USA

^cUniversity of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania, USA

^dAllegheny County (Pennsylvania) Health Department, Allegheny County, Pennsylvania, USA

^eCenters for Disease Control, National Center for Chronic Disease Prevention and Health Promotion, Atlanta, Georgia

Abstract

Background: The impacts of opioid use disorder and opioid-involved overdose are known, but less is known about the contexts in which people first misuse opioids, and the motivations for continued misuse.

Methods: In-depth interviews with 26 individuals in Allegheny County, Pennsylvania with current or past histories of opioid misuse were conducted. Narratives were analyzed to understand the circumstances and influences contributing to initial and continued misuse of opioids.

Results: Participants described social and familial contexts that normalized or accepted opioid misuse—this often included their own use of other illicit substances prior to initiating opioids. Participants also described initial use of opioids as related to efforts to cope with physical pain. They also described recognizing and then seeking psychological/emotional benefits from opioids. All three of these themes often overlapped and intersected in these stories of starting opioid misuse.

Conclusions: Opioid misuse stemmed from complex interacting influences involving coping with physical and psychological pain, perception that opioids are needed to feel “normal”, and acceptance or normalization of opioid use. This suggests a multi-pronged approach to both prevention and treatment are needed.

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CONTACT Judy C. Chang, MD, MPH changjc@upmc.edu Departments of Obstetrics, Gynecology and Reproductive Science and General Internal Medicine, University of Pittsburgh, 3240 Craft Place #229 Pittsburgh, PA 15213, USA.

Author contributions

The authors confirm contribution to the paper as follows: study conception and design: KH, JC; planning and supervision of work: KH, JC, ST; data collection: ST, NS; analysis and interpretation of results: ST, NS, RR, LK, JC, KH; manuscript preparation: NS, ST, RR, LK, JC, KH. All authors reviewed the results and approved the final version of the manuscript.

Keywords

Opioid misuse initiation; qualitative research; opioid crisis; social determinants of health

Introduction

In 2018, there were 67,367 drug overdose deaths in the U.S; among these, 46,802 involved opioids.¹ In [state], 2017 rates were more than double the national rate, 44.3 drug overdose deaths per 100,000, with the majority involving an opioid.² Nationwide, costs to Medicaid related to opioid use disorder (OUD) have increased from over \$2 billion in 1999 to more than \$8 billion in 2013 with most of this growth due to costs from other healthcare services for those with OUD rather than OUD treatment.³ The opioid crisis has impacted the criminal justice,⁴ child welfare,⁵ and educational systems.⁶ These costs “represent only a part of the vast economic damage caused by the loss of tens of thousands of people in the prime of their lives every year.”⁷

The impacts of OUD and opioid-involved overdose are known, but less is known about the contexts in which people first misuse opioids—opioid misuse initiation (OMI)—and the motivations for continued misuse. Research has shown differing pathways to opioid misuse (defined as use of prescription opioids in a manner other than directed by a doctor and/or use of illicit opioids)⁸—from individuals starting with misuse of their own prescriptions, to illicitly using others’ prescriptions, to initiating illicit opioid use.⁹ The initial illicit opioid source may vary between individuals, with some initiating opioid use through the use of others’ prescription opioids, and others through heroin introduced by peers.^{9–11}

Individuals may be exposed to opioid use through others who model use or provide easy access to substances. In childhood, situations that promote or support substance use may become adverse childhood experiences which may make later drug use more likely.¹² Current literature cites known risk factors for substance use to include early age of initiation, family history, and experience of trauma.^{13–16}

Prescription opioid misuse is a risk factor for heroin use^{10,11,17,18} and, in childhood or early adolescence, is a strong predictor of heroin use onset in adolescence and young adulthood, regardless of race/ethnicity or income group.¹⁹ As interventions to improve prescribing practices have made prescription opioids less accessible, heroin has become more prevalent as an initiating illicit opioid.^{20,21} Contamination of heroin and other substances with fentanyl and fentanyl analogues has created a riskier substance use environment, particularly for the opioid naïve.^{20–23}

A review of qualitative studies on prescription opioid misuse describes a “common pathway” from initial opioid exposure and continued use (often for self-medication) to physical dependence and withdrawal symptom avoidance as primary motivations for use, sometimes followed by transition to heroin when prescription drugs become too expensive or inaccessible.⁹ However, less is known about the circumstances influencing the start of this “common pathway” such as how and why individuals moved from first use to opioid misuse. The objective of this analysis was to better understand the circumstances surrounding initial

opioid misuse and continued misuse of opioids in Allegheny County, Pennsylvania through the narratives of individuals with experiences of opioid use disorders from communities with high rates of opioid overdose deaths.

Methods

Study design and sample

This analysis is part of a larger qualitative, rapid-assessment parent study using a descriptive ethnographic approach to understand stakeholder experiences of and perspectives on the opioid crisis in eight Allegheny County, Pennsylvania communities disproportionately impacted by opioid-involved overdose fatalities (“hotspot communities”).^{24–26} The parent study was an applied effort, rooted in a “community health” approach²⁷ where geographic, administrative communities²⁸ were the sites of study where joint action could affect the opioid crisis. As part of the rapid-assessment design, preliminary findings were regularly provided to the study’s leadership team to inform local efforts to address the opioid crisis.

The parent study leadership team identified key community stakeholder groups as interview candidates, among them persons who currently or in the past misused opioids. Leadership team members familiar with the communities provided initial community contacts. We utilized chain referral to expand the sample.²⁹ Participants were also recruited through fliers left with community members. Potential participants contacted researchers to schedule interviews, several were unreachable on callback or unable to be scheduled.

Semi-structured, open-ended interviews included questions and general prompts about the impacts of the opioid crisis on participants, impacts on their communities and their thoughts on approaches to address the crisis. For study participants who currently or previously had misused opioids, narratives of their introduction to opioids and of their opioid misuse and OUD were often their responses to our opening question asking what brought them to participate in the study and what was their connection to the opioid crisis their community. We refined the interview guide such that a prompt to ‘tell us your story’ was included among the questions. The full interview and context of the parent study, however, focused primarily on participants’ perspectives, opinions, and beliefs regarding their community.

We choose not to approach our data analysis with a specific preset theoretical framework as we wanted to avoid assumptions in describing and understanding the nuances and complexities of the impacts of the opioid crisis on individuals and communities.

This analysis prioritizes stakeholder narratives as effective sites for understanding the experiences and perspectives of those impacted by opioid misuse. Stories and narratives have increasingly been valued as tools for better understanding individuals’ lived experiences of illness, nuanced meanings attributed to different aspects of those experiences, and the ways in which individuals construct themselves in the telling of their narrative.^{30–32}

All interviews analyzed here were conducted by ST and NS, both trained in qualitative interviewing and analysis. Researchers had no previous relationships with participants. Interviews were conducted in person or by telephone, lasted approximately 1 hour, were

audio-recorded and professionally transcribed verbatim. Transcripts were checked for accuracy before being loaded into Atlas.ti 8 for analysis management. Informed consent was obtained from all participants. Participants were offered a \$20 gift card as compensation. All interviews were anonymous. The study was approved on June 26, 2018 by the University of Pittsburgh IRB and a waiver for written consent was obtained (Protocol # MOD18030265-01/PRO18030265).

Data analysis

We began our coding focusing on content,³³ and used an initial code book developed from questions from the interview guide and broad topics covered in the interviews. Among these topics, we noted transcripts that addressed participants' "stories of starting" or narratives that convey their recollections on how they began their path to developing an opioid use disorder. We sought an interpretative level, beyond content description, that helped foster understanding and insights from our participants' narratives about their experiences with opioid use disorder. We used inductive thematic analysis as our approach to participants' narratives of starting opioids, as we wanted to identify and describe both implicit and explicit themes.³⁴ We were guided by the importance of achieving trustworthy findings by meeting criteria of credibility, transferability, dependability, and confirmability.³⁵ Within this topic area, NS,ST and three other trained coders immersed themselves in the data, reading and rereading relevant transcripts, inductively coded three transcripts,³⁶ then met to triangulate findings, and refine codes. JC and the coders met on a regular basis to debrief on the analytic process and to co-code further transcripts until there were no discrepancies. Thematic saturation, the point at which no new codes emerged,³⁷ was reached by the fifteenth transcript. We triangulated our thematic findings with data from other stakeholder groups within our study as well as leadership meetings feedback which served as both peer debriefing and a check on referential adequacy. The final codebook was applied to all transcripts and our coding team reviewed the codes to identify relationships and patterns between and among code and identify key themes.

Results

Demographic characteristics

We interviewed 130 people across eight Allegheny County opioid-involved overdose "hotspot" communities between July 2018 and May 2019. Participants were asked to choose all stakeholder categories that applied to them on an anonymous, post-interview demographic form. They were also asked to indicate a primary category of identification for purposes of the study. Twenty-six (26) participants self-identified as persons with current or past opioid use disorder (OUD) and discussed opioid initiation: six (6) current OUD and twenty (20) past OUD (Table 1). All 26 shared their stories related to initiating opioids and their personal opioid use disorder.

Thematic results

We asked people who currently and formerly misused opioids to share their stories related to the opioid overdose epidemic. We expected that some participants' stories might have been rehearsed in a manner that echoes a history of participation in mutual aid groups

(such as Narcotics Anonymous) and repeatedly sharing their experiences. For the most part, participant's stories were not polished stories; instead, they varied in detail, were sometimes halting, and did not always emerge chronologically. Participants were able to highlight what they thought was most important to understand about their story. These aspects of their stories are reflected in our themes.

Participants described six categories of events or circumstances they attributed to the beginning of their personal opioid misuse story. These included (1) introduction to opioids through illicit opioids (mentioned by 9); (2) introduction to opioids through prescriptions (11); (3) using other substances (12); (4) starting substance use when young (11), (5) introduction to opioids by partner (6); (6) self-medication for physical or psychological pain (16). Building from these categories, we looked further into the framing, context, and elaborations contained in the participants' stories and identified the following main themes regarding participants initiation and subsequent continuation of opioid misuse: (1) social and familial contexts that normalized or accepted opioid misuse; (2) an inability to cope with either physical or mental pain; and (3) feeling that opioids allow one to feel psychologically "normal".

Social and familial contexts that normalize or accepted opioid misuse

Participants described the complex contexts and relationships in which their introduction to substance use occurred and intensified. Many described initiating substance use at a young age, often with alcohol and marijuana before and simultaneously with opioids. Polysubstance use was the second most frequently mentioned circumstance in participants' stories of starting opioid misuse. In several cases, participants disclosed all substances used, identifying alcohol and marijuana as initial substances with a progression or escalation to opioids.

Participants often described initial use of alcohol and marijuana as occurring in social contexts where substance use was modeled by peers and access to substances easy. There was also a perception that education around drug and alcohol use was lacking. Alcohol use prior to a transition to drug use was discussed in eleven interviews. In several cases participants described having easy access to alcohol during adolescence either at home or in the homes of friends:

Ah man, growing up it was uh, it was not good. I mean my childhood- I haven't been sober off all substances since I was thirteen years old, since I was able to start drinking with my friends and just hanging out. [male, 36]

I drank myself to my first blackout when I was 8. We were like the bartenders at a birthday party. Bartending, you learned, you sipped the foam off because everyone wanted it just to be perfect. [male, 45]

One participant traced her first use of alcohol and marijuana to an incident in which she observed family members using alcohol as a coping mechanism for grief:

I remember there was this really intense emotional experience that I went through very young. It was a death in the family and, I was like, 'Wait, why isn't everyone, like, sad about this?' I remember feeling that way, like, 'Oh this is what everyone is

doing, so I'm gonna, like, drink.' ... The first time I smoked pot too, was after the death of someone who was very close to me, and I mean the rest of the story, it's just like the typical—someone who is my age, like prescription opioids first, um. It's so crazy ... using drugs and alcohol was the coping skill that was modeled to me [female, 28]

Others described family members, friends, or romantic partners introducing them to opioids. For example, one participant discussed her escalation in drug use following initiation in adolescence:

My first substance, I was drinking and smoking weed. That is what started it, when I was 12, and then it just escalated. My mom, she was in active addiction. The first time I ever did a line of coke was with my mom. The first time I ate a pill was with my mom. Vicodin, and it just kept escalating. [female, 38]

I also remember the first time I took Percs (Percoset). I was at some party, um, with my brother and his friends, right? And they were like "Hey, just do this," y'know. [female, 28]

The following participant was introduced to heroin in the context of an intimate partner relationship and mentioned lack of education about risks associated with substance use as a factor in their own and others' behavior.

I was completely innocent then. When I got to high school and started experimenting and the lack of education on drug use and all drugs definitely lead me into a pattern that would eventually lead to heroin, ok to do, and ok to do with a needle.

So I could have had more education. I know that and would have avoided the whole deal. I kind of did it for a girl, you know, so. She was like, "Oh, it is fine, you will be fine. It is not bad for you.' but you know obviously it is but, I was ... She was a bit older. [male, 36]

Coping with pain

Other stories regarding participant's start on a path of opioid misuse began with experiences of physical pain for which they sought relief. Participants' stories of OMI differed in terms of the source of their first opioid and in the detailed progression from nonuse to misuse and to OUD. Not all participants had experience using heroin; some had misused prescription opioid pills or fentanyl patches for the duration of their opioid misuse and OUD. Among those who used heroin, not all had injected. Of the twenty participants who mentioned their first opioid, eleven mentioned having had their own prescription to treat pain following an accident, injury, or medical procedure. In these stories, participants described high doses or prolonged narcotic treatment as part of their pathway to opioid misuse. This was the most common theme related to initial opioid introduction.

I was in a car accident when I was 18, and my sciatic nerve was pinched. Well, I went to the doctor and they prescribed me 100mg Fentanyl patches, 120 Perc 10's, Valium and Xanax at 18! I didn't have any idea. Everybody was like, 'Oh, you got the best pain medication.' [female, 32]

Others described finding pain relief outside of the medical system through using friends' or family member's prescribed opioids or obtaining them from others.

I worked with a guy who had an unlimited supply of Percocet–Perc thirty. He was feeding me them at work, just giving them to me. I'd been taking the pills to get through, you know, pain-wise, thinking 'No big deal.' Well, I got hooked on them. Then when they ran out it spiraled into buying pills on the streets. Then going from Percocet to Opanas, which is a stronger narcotic. Then from Opanas it just led into a heroin addiction. [male, 36]

While these stories began with seeking pain relief, discomfort and complications related to discontinuation of prescription opioids was also often mentioned. Abrupt discontinuation, and resultant withdrawal or fear of withdrawal, was characterized as influencing transition from prescription opioids to illicitly obtained pills or heroin. A 31-year-old female explained:

At that time my body wasn't withdrawing from it yet. Well, then the doctors went under investigation, in [PA town]. I guess they were pushing all these high pain medications on people. Well, they shut me off after 8 months. I ended up in the hospital for two days. I had so much fluid from the fentanyl around my heart and I didn't know what sick was. Well, then I tried to get pain pills and I couldn't get them, so I ended up ... , and everyone was like, 'Oh heroin is the same thing.' So I started doing the heroin.

Opioids provide a sense of psychological normality/relief

Many participants indicated that they continued misuse of opioids to self-medicate for psychological pain and/or mental health concerns. In the following example, this participant describes how opioids helped her avoid triggers for her post-traumatic syndrome disorder (PTSD):

I have severe PTSD from being shot. Like hearing violent noises. Helicopters, because I was life-flighted; firecrackers, things like that trigger it sometimes. My triggers only come back when I'm clean. When I'm using either they are there, and I don't pay attention to it, or I use it to make them go away. [female, 38]

Another participant described how the relief from her feelings of anxiety provided by opioids made her feel "normal":

I always had trouble with mental health, but I just didn't know what it was—the anxiety. I was a very good student in school, but I used to wake up not wanting to get out of bed and not wanting to be around anybody. It is horrible. I was already almost at that age where you start, you don't know any better, you get around people and you start getting high and you think, 'Oh wow, hold on, now I feel normal', whatever that may be. It took away the pain, took away the anxiety. But you don't realize what's really happening; you don't have perspective. You are self-medicating for the mental health, for the trauma, but you don't know that at the time. You have no way of knowing. Everything is relative. You don't have the

perspective to see what is really going on. Then it becomes such a vicious cycle.
[female, 39]

As in the other themes, while these participants first began their opioid use for emotional/psychological relief this led to opioid dependence and a cycle in which continued use was sought to stave off withdrawal.

The main themes were derived from rich, complex narratives that included multiple themes. Participants often began their narratives by describing the environment and/or circumstances surrounding their initial substance misuse. Many described feelings of belonging to a family or social group that appeared to normalize substance misuse. Participants that identified specific individuals who were integral to their own stories of substance misuse often described these relationships as starting from places of trust, wherein the participant felt that substance misuse became normalized, allowed, and accepted. Analyzing the study transcripts revealed multiple instances where the concept of “coping” was either directly mentioned or inferred by participants in relation to their misuse. Although the need to cope with some source of physical or psychological pain differed across participants, the coping strategy of misusing opioids was the same. In cases of physical pain, participants either began their misuse as the first remedy for alleviating physical pain, or their misuse followed a legitimate opioid prescription. For those coping with psychological pain, some participants described their misuse as mediating adverse psychological symptoms, providing a sense of “relief or normality.” Although participants’ journeys through OMI began in different ways, the end result of OUD resulted in a cyclical need to seek out opioids and to prevent withdrawal symptoms.

Discussion

Some major themes that emerged from our analysis of participants’ narratives of introduction to opioids included having used other substances, multiple pathways of access to opioids and previously existing or co-occurring physical and mental health issues. First opioid misuse was frequently contextualized by relationships that either supported or promoted substance use that align with known risk factors for substance use.^{12–15,38} Many of our participants described already using substances before their introduction to opioids.

For many participants, transition to opioid misuse was driven by access to high doses and continued amounts of prescribed opioids. This reflects popular media narratives of the current opioid overdose epidemic,^{39,40} and research shows that opioid misuse in the current crisis in the US often begins with prescription opioids rather than heroin.^{17,18,38} In some cases, subjects were unfamiliar with the addictive potential of their prescribed medications. With over-prescription of opioids and widespread availability of heroin, participants’ access to drugs increased along with their risk of addiction and overdose. While this is consistent with current literature on the abundance of circulating prescription opioids in the US throughout the late 1990s through 2000s,^{41,42} it suggests that the use of a specific opioid (prescribed or illicit) was not necessarily based on forethought, but rather based on ease of access and overall drug availability. But not all participants first encountered opioids through

a prescription: initial opioid sources also included misuse of others' prescription opioids and heroin introduced by peers—pathways to use noted in the literature.^{43–45}

Once misusing opioids, physical and mental health were influential in individuals' motivation to continue. Rather than simply “getting high,” many participants' narratives depicted continued use related to a desire to self-medicate. Use of substances for self-medication of mood or anxiety disorder symptoms is a significant predictor of subsequent or persistent substance use disorder.⁴⁶ For many individuals, there is a link between self-medication and the lasting impacts of traumatic experiences.⁴⁵

Other participants also discussed transitioning to opioid misuse to avoid unpleasant or distressing withdrawal symptoms. Opioid withdrawal has been associated with faulty decision-making occurring as individuals experience suffering or distress with withdrawal symptoms that in turn leads to more desperate or impulsive attempts to use opioids to stop or avoid such symptoms. Studies suggest that controlled taper of narcotics when managing pain or treatment with buprenorphine can reduce risky decision making when individuals want to reduce their narcotics use.^{47–49}

The emphasis on opioid addiction as brain disease has had positive effects on research efforts, treatment, and stigma reduction.^{50,51} Our work reinforces the importance of attention to the psychosocial in the ‘biopsychosocial’ model of addiction, particularly in conceptualizing prevention. In their narratives, participants in our study focused on their social contexts of substance use, even before their introduction to opioids, and their motivations to continue opioid use as a way of coping with mental or physical pain before the need to stave off withdrawal became the primary motivation for use. Their stories centered on the interpersonal and internally personal contexts that contributed to their misuse initiation. The interconnected nature of the themes in these narratives indicates that there are multiple potential points of intervention related to prevention and intervention efforts.

Limitations

Qualitative data collection centered around retrospective lines of inquiry may be subject to recall bias as events and situations discussed may have occurred years prior to the interview. Participants may emphasize certain aspects of their stories over others due to social desirability. As with many qualitative studies, the sample likely did not represent all viewpoints and experiences, particularly since most of our participants had misused opioids in the past. Our design and sampling did not allow us to examine potential differences between individuals with past versus current opioid misuse; our analysis focused instead on cross-cutting patterns. However, the points of view represented in our interviews were consistent with previous work on the topic of opioid misuse initiation.^{9,44} The sample is not particularly diverse in spite of specific attention to two majority African American communities, this does reflect the demographics of opioid-involved fatality in the county but is also a limitation.

Conclusions

Firsthand accounts from persons who currently or formerly misused opioids help fill gaps in our understanding of the lived experiences and context of OMI. These accounts illustrate the extent to which early exposure to substance use, and concurrent mental and physical health stressors precede OMI, even in the context of opioid epidemic in the United States which initially reflected ease of access to and overall availability of prescription opioids. This study was not undertaken strictly for generalizability, but to learn about local community contexts of opioid use, overdose, and potential interventions during an epidemic. We did not know what we would find in local contexts, so both the method for understanding those contexts as well as the findings offered a new perspective on the epidemic. Information about how our study participants began opioid misuse is important for this effort, and while perhaps not different from other studies, confirmatory information is important for future interventions. Understanding what motivates substance misuse and substance use disorder is important to designing prevention and treatment strategies.⁵²

This work supports the need to understand the multifaceted drivers of substance use disorder in efforts at prevention⁵³ and the need to focus more broadly on public health prevention strategies that emphasize social determinants of health to reduce the number of people who develop substance use disorders^{54–56}. This is particularly crucial at a time when the United States is experiencing another wave of an opioid overdose epidemic characterized by overdose deaths resulting mainly from synthetic opioids such as fentanyl and its analogues^{41,57}. The illicit drug market is arguably becoming riskier, with people who use drugs less able to gauge what they are using.^{22,58} This has implications for people who use opioids of every duration and stage of use but particularly those initiating opioid misuse. While harm reduction efforts such as needle exchange, naloxone distribution, and treatment with medication such as buprenorphine and methadone have shown effectiveness in reducing end-point outcomes such as opioid overdose deaths and HIV transmission,^{59,60} the themes identified in these initiation stories indicate a need to develop and expand effective interventions to prevent the beginnings of opioid misuse as well as identify key areas in which such interventions should target. We know that the risk for developing a substance use disorder is highest for those who initiate substance use in their early teens, and use disorder is most likely to start in the late teens.⁶¹ Adolescents are susceptible to influences from their peer and surrounding culture. Expanded and improved education about potential addictive potential and health and social impact of substances is needed for all adolescents. Reviews have noted that school-based prevention interventions have reduced later substance use—particularly comprehensive approaches that pair anti-drug information with skills-building in the areas of self-management, resisting peer-pressure, and healthy social interactions.⁶² Additionally, our findings point toward a need to focus on mental health and coping skills. Although more large-scale rigorous trials are needed, several studies examining cognitive behavioral therapy and skills-focused techniques to cope with chronic pain suggest that such coping skills paired with a sense of self-efficacy can reduce impairment and distress associated with pain and reduce dependence on narcotic medications.^{63–65} Additionally, psychological impacts of trauma and abuse have consistently been associated with substance misuse and addiction.⁶⁶ Identifying and expanding dissemination of effective interventions

to address trauma is a needed step in preventing initiation of opioid misuse in those exposed to violence, abuse, and mistreatment. Overall, in understanding how those with opioid use disorders describe the beginnings of their opioid misuse, we can identify areas to target that may rewrite the stories of other at-risk individuals.

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References

- [1]. Wilson N, Kariisa M, Seth P, Smith HI, Davis N. Drug and opioid-involved overdose deaths – United States, 2017–2018. *MMWR Morb Mortal Wkly Rep.* 2020;69 (11):290–297. [PubMed: 32191688]
- [2]. National Institute on Drug Abuse. Pennsylvania Opioid Summary. Revised May 2019; <https://www.drugabuse.gov/opioid-summaries-by-state/pennsylvania-opioid-summary>. Accessed August 12, 2019.
- [3]. Leslie DL, Ba DM, Agbese E, Xing X, Liu G. The economic burden of the opioid epidemic on states: the case of Medicaid. *Am J Manag Care.* 2019;25(13 Suppl):S243–S249. [PubMed: 31361426]
- [4]. Zajac G, Nur SA, Kreager DA, Sterner G. Estimated costs to the Pennsylvania criminal justice system resulting from the opioid crisis. *Am J Manag Care.* 2019;25(13 Suppl):S250–S255. [PubMed: 31361427]
- [5]. Crowley DM, Connell CM, Jones D, Donovan MW. Considering the child welfare system burden from opioid misuse: research priorities for estimating public costs. *Am J Manag Care.* 2019;25(13 Suppl):S256–S263. [PubMed: 31361428]
- [6]. Morgan PL, Wang Y. The opioid epidemic, neonatal abstinence syndrome, and estimated costs for special education services. *Am J Manag Care.* 2019;25(13 Suppl):S264–S269. [PubMed: 31361429]
- [7]. Kawasaki S, Sharfstein JM. The cost of the opioid epidemic, in context. *Am J Manag Care.* 2019;25(13 Suppl):S241–S242. [PubMed: 31361433]
- [8]. Prevention CfDca. Opioid Overdose, Opioid Basics, Commonly Used Terms. 2020.

- [9]. Cicero TJ, Ellis MS. The prescription opioid epidemic: a review of qualitative studies on the progression from initial use to abuse. *Dialogues Clin Neurosci.* 2017;19(3):259–269. [PubMed: 29302223]
- [10]. Jones CM. Heroin use and heroin use risk behaviors among nonmedical users of prescription opioid pain relievers – United States, 2002–2004 and 2008–2010. *Drug Alcohol Depend.* 2013;132(1–2):95–100. [PubMed: 23410617]
- [11]. Lankenau SE, Teti M, Silva K, Jackson Bloom J, Harocopos A, Treese M. Initiation into prescription opioid misuse amongst young injection drug users. *Int J Drug Policy.* 2012;23(1):37–44. [PubMed: 21689917]
- [12]. Dube SR, Felitti VJ, Dong M, Chapman DP, Giles WH, Anda RF. Childhood abuse, neglect, and household dysfunction and the risk of illicit drug use: the adverse childhood experiences study. *Pediatrics.* 2003;111(3):564–572. [PubMed: 12612237]
- [13]. Simpson TL, Miller WR. Concomitance between childhood sexual and physical abuse and substance use problems. A review. *Clin Psychol Rev.* 2002;22(1):27–77. [PubMed: 11793578]
- [14]. Blanco C, Wall MM, Liu SM, Olfson M. Toward a comprehensive developmental model of prescription opioid use disorder. *J Clin Psychiatry.* 2019;81(1):19m12775.
- [15]. Grant BF, Dawson DA. Age of onset of drug use and its association with DSM-IV drug abuse and dependence: results from the National Longitudinal Alcohol Epidemiologic Survey. *J Subst Abuse.* 1998;10(2):163–173. [PubMed: 9854701]
- [16]. Trenz RC, Scherer M, Harrell P, Zur J, Sinha A, Latimer W. Early onset of drug and polysubstance use as predictors of injection drug use among adult drug users. *Addict Behav.* 2012;37(4):367–372. [PubMed: 22172686]
- [17]. Muhuri P, Gfroerer J, Davies M. Administration SANMHS. Associations of Nonmedical Pain Reliever Use and Initiation of Heroin Use in the United States. Rockville: CBHSQ Data Review; 2013.
- [18]. Cicero TJ, Ellis MS, Surratt HL, Kurtz SP. The changing face of heroin use in the United States: a retrospective analysis of the past 50 years. *JAMA Psychiatry.* 2014;71(7):821–826. [PubMed: 24871348]
- [19]. Cerda M, Santaella J, Marshall BD, Kim JH, Martins SS. Nonmedical prescription opioid use in childhood and early adolescence predicts transitions to heroin use in young adulthood: a national study. *J Pediatr.* 2015;167(3):605–612. [PubMed: 26054942]
- [20]. Cicero TJ, Ellis MS, Kasper ZA. Increased use of heroin as an initiating opioid of abuse. *Addict Behav.* 2017;74:63–66. [PubMed: 28582659]
- [21]. Cicero TJ, Kasper ZA, Ellis MS. Increased use of heroin as an initiating opioid of abuse: Further considerations and policy implications. *Addict Behav.* 2018;87:267–271. [PubMed: 30006021]
- [22]. Ciccarone D, Ondocsin J, Mars SG. Heroin uncertainties: exploring users’ perceptions of fentanyl-adulterated and -substituted ‘heroin’. *Int J Drug Policy.* 2017;46:146–155. [PubMed: 28735775]
- [23]. Fairbairn N, Coffin PO, Walley AY. Naloxone for heroin, prescription opioid, and illicitly made fentanyl overdoses: challenges and innovations responding to a dynamic epidemic. *Int J Drug Policy.* 2017;46:172–179. [PubMed: 28687187]
- [24]. Hacker K, Jones LD, Brink L, et al. Linking opioid-overdose data to human services and criminal justice data: opportunities for intervention. *Public Health Rep.* 2018;133(6):658–666. [PubMed: 30300555]
- [25]. Analytics AC. Opioid-related overdose deaths in Allegheny County: Report and Maps. 2018. <https://www.alleghenycountyanalytics.us/index.php/2018/02/15/opioid-related-overdose-deaths-allegheny-county-report-data-visualizations/>.
- [26]. Allegheny County Department of Human Services. Heat map of opioid-related overdose deaths in Allegheny County, 2015–2016. 2018. <https://www.alleghenycountyanalytics.us/wp-content/uploads/2018/02/ACDHS-Opioid-Overdose-Deaths-Heat-Map-020618.pdf>. Accessed June 01, 2018.
- [27]. Goodman RA, Bunnell R, Posner SF. What is “community health”? Examining the meaning of an evolving field in public health. *Prev Med.* 2014;67(Suppl 1):S58–S61. [PubMed: 25069043]

- [28]. MacQueen KM, McLellan E, Metzger DS, et al. What is community? An evidence-based definition for participatory public health. *Am J Public Health*. 2001;91(12):1929–1938. [PubMed: 11726368]
- [29]. Penrod J, Preston DB, Cain RE, Starks MT. A discussion of chain referral as a method of sampling hard-to-reach populations. *J Transcult Nurs*. 2003;14(2):100–107. [PubMed: 12772618]
- [30]. Mattingly C, Garro L. Narrative representations of illness and healing. Introduction. *Soc Sci Med*. 1994;38(6):771–774. [PubMed: 8184328]
- [31]. Kleinman A *The Illness Narratives: Suffering, Healing, and the Human Condition*. New York, NY: Basic Books; 1988.
- [32]. Mattingly C, Lawlor M. Learning from stories: narrative interviewing in cross-cultural research. *Scand J Occup Ther*. 2000; 7(1):4–14. [PubMed: 21399739]
- [33]. Morgan DL. Qualitative content analysis: a guide to paths not taken. *Qual Health Res*. 1993;3(1):112–121. [PubMed: 8457790]
- [34]. Guest G, MacQueen K, Namey E. *Applied Thematic Analysis*. Thousand Oaks, CA: SAGE Publications, Inc; 2012.
- [35]. Lincoln Y, Guba E. *Naturalistic Inquiry*. Newbury Park, CA: Sage; 1985.
- [36]. Elo S, Kyngas H. The qualitative content analysis process. *J Adv Nurs*. 2008;62(1):107–115. [PubMed: 18352969]
- [37]. Guest G, Bunce A, Johnson L. How many interviews are enough? An experiment with data saturation and variability. *Field Methods*. 2006;18(1):59–82.
- [38]. Han B, Compton WM, Blanco C, Crane E, Lee J, Jones CM. Prescription opioid use, misuse, and use disorders in U.S. adults: 2015 National Survey on Drug Use and Health. *Ann Intern Med*. 2017;167(5):293–301. [PubMed: 28761945]
- [39]. Netherland J, Hansen H. White opioids: pharmaceutical race and the war on drugs that wasn't. *Biosocieties*. 2017;12(2): 217–238. [PubMed: 28690668]
- [40]. McLean K From “junkies” to “soccer moms”: newspaper representations of overdose, 1988–2014. *Crit Crim*. 2017;25(3): 411–432.
- [41]. Ciccarone D The triple wave epidemic: supply and demand drivers of the US opioid overdose crisis. *Int J Drug Policy*. 2019; 71:183–188. [PubMed: 30718120]
- [42]. King NB, Fraser V, Boikos C, Richardson R, Harper S. Determinants of increased opioid-related mortality in the United States and Canada, 1990–2013: a systematic review. *Am J Public Health*. 2014;104(8):e32–e42.
- [43]. Harocopos A, Allen B, Paone D. Circumstances and contexts of heroin initiation following non-medical opioid analgesic use in New York City. *Int J Drug Policy*. 2016;28:106–112. [PubMed: 26818082]
- [44]. Rigg KK, McLean K, Monnat SM, Sterner GE 3rd, Verdery AM. Opioid misuse initiation: implications for intervention. *J Addict Dis*. 2019;37(3–4):11–122.
- [45]. Rigg KK, Murphy JW. Understanding the etiology of prescription opioid abuse: implications for prevention and treatment. *Qual Health Res*. 2013;23(7):963–975. [PubMed: 23656723]
- [46]. Turner S, Mota N, Bolton J, Sareen J. Self-medication with alcohol or drugs for mood and anxiety disorders: a narrative review of the epidemiological literature. *Depress Anxiety*. 2018; 35(9):851–860. [PubMed: 29999576]
- [47]. Gowing L, Ali R, White JM. Buprenorphine for the management of opioid withdrawal. *Cochrane Database Syst Rev*. 2009; (3):CD002025.
- [48]. Berna C, Kulich RJ, Rathmell JP. Tapering long-term opioid therapy in chronic noncancer pain: evidence and recommendations for everyday practice. *Mayo Clin Proc*. 2015;90(6): 828–842. [PubMed: 26046416]
- [49]. Sullivan MD, Turner JA, DiLodovico C, D'Appollonio A, Stephens K, Chan YF. Prescription opioid taper support for outpatients with chronic pain: a randomized controlled trial. *J Pain*. 2017;18(3):308–318. [PubMed: 27908840]
- [50]. Volkow N, Drugs, brains, and behavior: the science of addiction. *NIH Medicine Plus*. 2012;2(2):14–17.

- [51]. Volkow ND, Boyle M. Neuroscience of addiction: relevance to prevention and treatment. *Am J Psychiatry*. 2018;175(8):729–740. [PubMed: 29690790]
- [52]. Kleber HD, Weiss RD, Anton RF, et al. Treatment of patients with substance use disorders, second edition. American Psychiatric Association. *Am J Psychiatry*. 2006;163(8 Suppl):5–82.
- [53]. Scanlon DP, Hollenbeak CS. Preventing the next crisis: six critical questions about the opioid epidemic that need answers. *Am J Manag Care*. 2019;25(13 Suppl):S234–S238. [PubMed: 31361431]
- [54]. Compton WM, Jones CM, Baldwin GT, Harding FM, Blanco C, Wargo EM. Targeting youth to prevent later substance use disorder: an underutilized response to the US opioid crisis. *Am J Public Health*. 2019;109(S3):S185–S189. [PubMed: 31242006]
- [55]. Fassbender L, Zander GB, Levine RL. Beyond rescue, treatment, and prevention: understanding the broader impact of the opioid epidemic at the state level. *Am J Manag Care*. 2019;25(13 Suppl):S239–S240. [PubMed: 31361432]
- [56]. Fraser M, Plescia M. The opioid epidemic's prevention problem. *Am J Public Health*. 2019;109(2):215–217. [PubMed: 30649947]
- [57]. CDC. Drug overdose deaths. 2018. [cdc.gov/drugoverdose/data/statedeaths.html](https://www.cdc.gov/drugoverdose/data/statedeaths.html). Accessed November 21, 2019.
- [58]. Ciccarone D. Fentanyl in the US heroin supply: a rapidly changing risk environment. *Int J Drug Policy*. 2017;46:107–111. [PubMed: 28735776]
- [59]. McDonald R, Strang J. Are take-home naloxone programmes effective? Systematic review utilizing application of the Bradford Hill criteria. *Addiction*. 2016;111(7):1177–1187. [PubMed: 27028542]
- [60]. Programs NRCaIoMPoNEaBD. Preventing HIV Transmission: The Role of Sterile Needles and Bleach. Washington, DC.: National Academies Press (US); 1995.
- [61]. Compton WM, Thomas YF, Stinson FS, Grant BF. Prevalence, correlates, disability, and comorbidity of DSM-IV drug abuse and dependence in the United States: results from the national epidemiologic survey on alcohol and related conditions. *Arch Gen Psychiatry*. 2007;64(5):566–576. [PubMed: 17485608]
- [62]. Das JK, Salam RA, Arshad A, Finkelstein Y, Bhutta ZA. Interventions for adolescent substance abuse: an overview of systematic reviews. *J Adolesc Health*. 2016;59(4S):S61–S75. [PubMed: 27664597]
- [63]. Benyon K, Hill S, Zadurian N, Mallen C. Coping strategies and self-efficacy as predictors of outcome in osteoarthritis: a systematic review. *Musculoskeletal Care*. 2010;8(4):224–236. [PubMed: 20963846]
- [64]. Van Denburg AN, Vilardaga JP, Shelby RA, Keefe FJ. Opioid therapy and persistent pain: can cognitive behavioral therapy help? *Pain*. 2018;159(3):411–415. [PubMed: 29084050]
- [65]. Hilton L, Hempel S, Ewing BA, et al. Mindfulness meditation for chronic pain: systematic review and meta-analysis. *Ann Behav Med*. 2017;51(2):199–213. [PubMed: 27658913]
- [66]. Jacobsen LK, Southwick SM, Kosten TR. Substance use disorders in patients with posttraumatic stress disorder: a review of the literature. *Am J Psychiatry*. 2001;158(8):1184–1190. [PubMed: 11481147]

Table 1.

Participant characteristics.

	Participants Who are Currently Misusing Opioids (<i>n</i> = 6)	Participants Who Misused Opioids in the Past (<i>n</i> = 20)
Age	37.6 average/36 median Range 32–49	42.7 average/41 median Range 23–63
Sex		
Male	5	6
Female	1	14
Race (self ID)		
White/Caucasian	6	14
Black/African American		1
More than one		4
Other		1
Relationship status		
Single, never married	1	14
Married	2	2
Partnered, never married	1	2
Divorced	0	1
Widowed	1	0
Missing data	1	1
Educational Attainment		
Did not finish HS	1	1
HS diploma/GED	3	12
2-yr college/tech	1	2
4-yr college/tech	0	4
Graduate school	0	1
Missing Data	1	0
Work status		
Work outside home for pay	1	6
Work from home for pay	0	1
Retired	0	1
Unemployed/looking	2	3

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	Participants Who are Currently Misusing Opioids (n = 6)	Participants Who Misused Opioids in the Past (n = 20)
Unemployed/disability	2	8
Missing data	1	1
Income		
Less than \$10,000	2	4
\$10,000–19,999	1	2
\$20,000–29,999	0	3
\$30,000–39,000	0	3
\$40,000 +	1	1
Don't know	1	4
Prefer not to answer	0	3
Missing data	1	0