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The protective effect of trusted dealers against opioid overdose in the U.S.

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Abstract

Background: Opioid overdose has become the leading cause of death among adults between 25 and 54 years old in the U.S. The purpose of this study is to explore the social and relational factors that shape the current opioid overdose epidemic.

Methods: Between January 2016 and February 2017, adults in Providence, Rhode Island, who use opioids were recruited to complete structured survey and semi-structured interview about the social context of their substance use.

Results: A total of 92 individuals completed a survey and an interview. Of those, 51 individuals (68.6% male, 49.0% white) discussed their relationships with drug suppliers in their interview and were included in this sub-study. Many of these participants indicated that long-term relationships with trusted dealers represent a key strategy for reducing the risk of substance use-related harm due to suppliers' alleged adoption of consumer protection strategies (e.g. refusing to sell fentanyl) and quality assurance measures (e.g. testing batches of drugs for fentanyl prior to sale).

Conclusion: Interpersonal relationships between individuals who use drugs and their suppliers strongly influence the risk and protective factors experienced by people who use drugs in today's opioid overdose epidemic. Evidence-based prevention strategies that are based on an awareness of —or even designed to harness—those positive and/or protective relationships that people who use drugs have already constructed for themselves are likely merited.

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Declaration of Competing Interest

None.

Keywords

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Introduction

Eric (a pseudonym) is a low-level heroin dealer. He buys the drug in batches from other suppliers higher up the illicit market's proverbial food chain and then repackages that supply to sell to his customers. One day, not long ago, Eric came home to see a news story on a local television station about an overdose victim found and resuscitated in a public parking lot nearby. The newscast reported that fentanyl, a powerful synthetic opioid, was present in the drugs this individual had used and was likely the cause of their overdose. Eric was shocked to recognize the overdose victim on the news as one of his own clients. This is how Eric learned that the heroin he was currently selling was adulterated with fentanyl.

Our research team heard this story by way of one of Eric's regular clients, a middle-aged white woman named Sandy (also a pseudonym). She spoke in detail about the conversation she had with Eric when he called her to warn her about what he saw on the news. He recommended she throw away the drugs she had just bought from him in light of this newly discovered fentanyl contamination. Allegedly, Eric even offered to replace the drugs they threw out with a new batch of (ostensibly fentanyl-free) heroin at a discounted price. "I know it sounds crazy to you guys," Sandy said in our interview, "but some of them [dealers] actually care if they serve you that [fentanyl]. They don't want you dead. They need you for that money. And they don't want you dead. So, there are some dealers that actually care."

The axiom that "epidemics are fundamentally social processes" (Maher, 2002) has been foundational to social medicine and, later, critical medical anthropology since this view was broadly promoted by physician-anthropologist Rudolph Virchow in the 19th century. "Medicine," he wrote in his 1848 administrative report on an infectious disease outbreak in the desperately oppressed region of Upper Silesia, "has imperceptibly led us into the social field and placed us in a position of confronting the great issues of our time." (Virchow, 2006). Following this insight, research into the social-epidemiological dynamics of opioid overdose throughout the world have paid close attention to structural and individual-behavioral drivers of negative health outcomes (Butt et al., 2017; Culbert et al., 2016; Fornili, 2018; Gilbert et al., 2013; Heimer, 2018; Perlman & Jordan, 2018). Further, the ability of social relationships and social network dynamics to shape health outcomes on a population-level has been well established by recent research on sexually-transmitted HIV (Brennan et al., 2012; Teixeira da Silva et al., 2019; Valenzuela-Jiménez, Manrique-Hernández & Idrovo, 2017). Research exploring the impact of social and relational factors on overdose, however, remains sparser.

In the past few years, a growing number of mixed-methods research studies have successfully contextualized different features of the U.S.' current opioid overdose epidemic within the social environments that engendered them. Many have explored individual or micro-level factors, including risk-reduction strategies developed by people who use drugs to cope with the falling availability of prescription opioids in the drug market (Mars,

Bourgois, Karandinos, Montero & Ciccarone, 2014) and the potential harms of unintentional fentanyl-exposure (Carroll, Marshall, Rich & Green, 2017; Rhodes et al., 2019). Recent studies have also investigated the structural, or macro-level, factors that shape the overdose risk environment, demonstrating how the risk of fentanyl exposure may vary according to the kind of heroin products—or products presented to consumers as heroin or as heroin-like (Ciccarone, Ondocsin & Mars, 2017)—that are locally available, the marketing methods used to sell those products, and the amount of product information made available to consumers through local market structures (Mars et al., 2015, 2016).

Little research on the current, fentanyl-fueled opioid overdose epidemic, however, has explored in-depth the role of socio-relational factors, such as the nature of the relationship between Eric and Sandy and the sense of mutual obligation they feel towards each other, in shaping the health outcomes of people who use drugs. Early substance use research in the U.S. has posed these vital questions about the social terrain of substance use and its related harms that remain highly relevant today (Bourgois, Prince & Moss, 2004; Singer, Valentín, Baer & Jia, 1992; Spradley, 1968). To the best of our knowledge, however, only two studies conducted during the current epidemic have explicitly analyzed the role of socio-relational factors in shaping health outcomes. The most recent of these, which was conducted among a predominantly African-American cohort of people who use drugs in urban North Carolina, produced two important findings: (1) relying on trusted or familiar dealers was as a commonly reported fentanyl-avoidance strategy used by individuals who preferred not to consume fentanyl-adulterated drugs and (2) participants reported encountering fentanyl-adulterated heroin—despite not seeking fentanyl—when they were unable to purchase drugs from dealers whom they knew and trusted (Rhodes et al., 2019). Additionally, an earlier study conducted among a predominantly white cohort of people who use drugs in Providence, Rhode Island, found that some participants described their overdose risk as directly increased or directly decreased as a result of actions allegedly taken by their dealers, suggesting that the nature of consumer-supplier relationships may differentially impact overdose risk in the illicit drug market (Carroll et al., 2017).

The purpose of this study is to elaborate and build upon these previously generated hypotheses. We aim to explore the social and relational factors that shape the current opioid overdose epidemic within a population of people who use drugs in Providence, Rhode Island. Specifically, we aim to describe the interpersonal relationships between people who use drugs and the individuals who act as their drug suppliers (whether regularly or irregularly) in order to consider how these social ties and the culturally-reinforced mutual obligations between them shape overdose risk. Put another way, this study asks how we can make sense of people like Eric, the heroin dealer who warned his clients about fentanyl contamination in his drugs, and the potential public health impact of the relationship he has built with Sandy by considering these supplier-consumer relationships through an ethnographic lens. Further, how might national-, state-, and community-level responses to today's opioid-overdose epidemic be improved if we are able to trace the role that he and others like him have in shaping patterns of overdose among participants in the illicit drug market?

Background

The illicit opioid market in the U.S. has undergone several transformations in recent decades. The history of current trends ostensibly begins in the early 1990s, when Colombian-sourced heroin—remarkably cheaper and purer than heroin originating elsewhere—began appearing in the U.S. drug market (Ciccarone, Unick & Kraus, 2009). Closely on the heels of the growing market share held by Colombian-sourced heroin came another significant trend: a massive growth in opioid prescribing in the U.S. health care system, including an increase in the retail sales of oxycodone (brand names include Percocet, Percodan, and OxyContin) of nearly 600% between 1997 and 2005 (Manchikanti, 2007). Many people who used opioids at that time did not use diverted prescription opioids exclusively. A large study of substance use trends in New York City in 2008 found that about 1 in 5 individuals who had recently used diverted prescription opioids also reported snorting heroin and about 1 in 5 had reported injecting heroin in the past year (Davis & Johnson, 2008). Nevertheless, rates of fatal overdose involving prescription opioids tripled over the same time period (Compton, Jones & Baldwin, 2016).

In 2010, the FDA approved a new, abuse-deterrent formulation of OxyContin, which “[was] intended to prevent the opioid medication from being cut, broken, chewed, crushed, or dissolved to release more medication” (U.S. Food & Drug Adminisration, 2010). In essence, this meant that commercially manufactured OxyContin, then an extremely popular product in the U.S. illicit/diverted drug market, could no longer be readily prepared or processed for snorting or injecting. Heroin—cheaper, purer, and more prevalent than it had ever been thanks to the glut of Colombian-sourced product—quickly became the substitute for many who could no longer access OxyContin. By 2012, ethnographic research conducted in several U.S. urban centers identified a sizeable cohort of (often, but not always) younger people who inject opioids who had initiated drug injection with diverted prescription opioids (like OxyContin) but then transitioned to heroin injection when the availability of early formulation OxyContin dropped and its street price increased (Cicero, Ellis & Surratt, 2012; Mars et al., 2014). Retrospective studies of nation-wide health data have directly linked the OxyContin reformulation to higher rates of hepatitis c (Powell, Alpert & Pacula, 2019) and opioid overdose (Evan & Lieber, 2018), indicating that this transition from OxyContin to heroin was widespread. Between 2010 and 2012, heroin overdose deaths doubled in 28 U.S. states (Rudd, Aleshire, Zibbell & Gladden, 2016).

In 2013, the State Health Laboratory and the State Medical Examiner of Rhode Island—where the study presented in this paper was conducted—reported a series of unusual deaths to the U.S. Centers for Disease Control and Prevention (CDC). Ten decedents who had experienced a fatal overdose tested positive for the synthetic opioid acetyl fentanyl in postmortem toxicology screening (U.S. Centers for Disease Control & Prevention, 2013). This was the first time that a fentanyl analog not commercially available (i.e. not prescription fentanyl) was identified in a cluster of fatal overdoses. Similar fentanyl-associated fatalities continued to appear in Rhode Island into the next year (Mercado-Crespo, Sumner, Spelke, Sugerman & Stanley, 2014). Fentanyl-related fatalities began to appear in neighboring Massachusetts in 2014 (Somerville et al., 2017), and, by 2016, were observed across the eastern and central regions of the U.S. (O’Donnell, 2017; Peterson et al.,

2016). The prevalence of fentanyl in the illicit market—by now well established as a supply-side response to shifts in the heroin market rather than a result of consumer demand (Mars, Rosenblum & Ciccarone, 2018)—has since continued to spread across the U.S., fundamentally changing the shape of the illicit drug market and the opioid overdose epidemic. By 2017, 47,600 opioid overdose deaths were identified in the U.S., more than 28,000 of which involved synthetic opioids like fentanyl (U.S. Centers for Disease Control & Prevention, 2019a, 2019b).

In the age of fentanyl, navigating product uncertainty in the illicit opioid market in Rhode Island—as elsewhere—presents many challenges. The gradual saturation of fentanyl into the New England drug market brought with it a sudden proliferation of visually and chemically varied “heroin” products that, according to consumers, presented with an assortment of atypical colors, textures, smells, and phenomenological effects (Carroll et al., 2017; Ciccarone et al., 2017). In Rhode Island, specifically, individuals who use opioids have reported adopting a variety of pseudo-strategies for detecting and avoiding fentanyl-contaminated drugs (checking for taste, smell, color when cooked in solution, etc.) as well as harm reduction strategies for reducing overdose risk (such as using a smaller quantity of drugs or consuming drugs more slowly) when the purity and potency of the drug is unknown, but these strategies are not always reliable (Carroll et al., 2017; Rouhani, Park, Morales, Green & Sherman, 2019). While it may have once been the case that adding inert or neutral cut to illicit opioid products (and thereby decreasing their potency) was neither universal nor systematic in the 1990s (Coomber, 1999), broad consensus has emerged in the age of fentanyl that products are frequently adulterated—either with neutral cutting agents, or with powerful synthetic opioids, or both—at unknown stages in the supply chain (Ciccarone et al., 2017; Mars, Ondocsin & Ciccarone, 2018). In Rhode Island, as elsewhere, the high prevalence of social supply (drugs brought and sold among close contacts with little or no regard to profit motive) in the local market obscures the presence and origin of fentanyl as “cut” even further, as both consumers and low level suppliers (including social suppliers) are an additional step removed from the adulteration process and the supply chains in which that adulteration takes place.

It is well established that product source, product purity, and the relative openness or closedness of a local drug market varies geographically between—and sometimes within—different parts of the U.S. (Mars et al., 2018; Mars, Bourgois, Karandinos, Montero & Ciccarone, 2016; Rosenblum et al., 2014). This variability, in turn, shapes the local risk environment for overdose (Mars et al., 2015) as well as the kinds of trust that may be established between supplier and consumer within a particular market (Carroll et al., 2017; Mars et al., 2018; Rhodes et al., 2019). Though trust in one’s supplier has been reported as a reason for disinterest in drug checking technology—such as fentanyl test strips—(Bardwell, Boyd, Arredondo, McNeil & Kerr, 2019), high levels of reported trust in local suppliers has not dampened enthusiasm for drug checking tools in Rhode Island (Goldman et al., 2019; Krieger et al., 2018). These strips only became widely available to individuals who use drugs in Rhode Island in 2018 (Miller, 2018), more than a year after this present study was completed. Thus, participants in this study were limited in their ability to identify fentanyl in the local drug supply through the use of fentanyl test strips, reliant on their own physical

senses and the information that passed between consumers and, occasionally, their suppliers, to make consumer choices—choices that were, at best, only partially informed.

Methods

Recruitment

Subject recruitment for this study has been described in detail elsewhere (Carroll et al., 2017). In brief, individuals who were at least 18 years of age, resided in Rhode Island, and had engaged in the use of an illicit opioid or diverted prescription opioid in the previous 30 days (by self-report) at the time of recruitment were eligible to participate. Recruitment took place between January 2016 and February 2017 at harm reduction programs, emergency departments, and other community-based organizations targeting at-risk populations throughout the city of Providence, Rhode Island.

Data collection

Participants in this study consented to an anonymous survey and a semi-structured interview [with J.C.]. The anonymous survey was designed to collect demographic information, substance use behaviors, treatment history, past experience with overdose, and suspected exposure to fentanyl in the past year. Interviews were designed to explore participants' experiences, as reported on the survey, and identify participants' insights about why those experiences (such as overdose, arrest, or suspected fentanyl exposure) occurred as they did. The interview format was intentionally developed to be flexible; the interviewer could diverge from the semi-structured questions to discuss new or unanticipated topics brought into the conversation by the participant, and new topics broached by participants could be used to inform the nature of open-ended questions in future interviews. All participants were offered $20 compensation for completing the survey and the interview.

Analysis

Descriptive statistics were generated from survey data to describe the study population. Interview recordings were transcribed and subsequently analyzed [by J.C.] contemporaneously with ongoing data collection using a modified version of grounded analysis for generating social theory (Glaser & Strauss, 1967). Also described in detail elsewhere (Carroll et al., 2017), this mode of analysis consists of actively reading and free-coding transcripts of completed interviews while new interviews are still being conducted. Conducting data collection and analysis simultaneously allows for the generation, testing, and refinement of hypotheses in the field.

The significance of the risk or protection that drug suppliers may confer upon their clients in shaping vulnerability to overdose was a hypothesis generated mid-way through the data-collection process. As a result, study participants who were recruited, consented, and interviewed *after* the generation of this hypothesis were explicitly prompted to discuss their relationship with various drug suppliers. Participants recruited and interviewed *prior* to the generation of this hypothesis, by contrast, were not given such prompts, as their relevance was not yet recognized by the study team. A post-hoc review of pre-hypothesis interviews revealed that some participants did discuss their drug suppliers and how their relationships

with those suppliers impacted their risk of harm despite not being explicitly prompted to do so; others, however, did not.

Once data collection had concluded, all transcripts were re-evaluated and central findings discussed for merit by all members of the study team [J.C., J.R., and T.G.]. Core concepts were further explored through recursive coding exercises within those thematic concepts [by J.C.]. The findings presented here were isolated in these final stages of analysis.

Human subjects approval

This research protocol and all amendments to that protocol made throughout the study period were approved by the Institutional Review Board at the Miriam Hospital in Providence, Rhode Island.

Results

A total of 92 individuals completed a survey and an interview for this study. Of those, 33 (35.9%) identified as female and 41 (44.6%) identified with a racial or ethnic group other than white. The majority of participants (n = 78, 84.8%) reported regular (at least weekly) non-medical use of an opioid of some kind. A small minority of participants (n = 9, 9.8%) reported using opioids less than weekly. The majority (n = 55, 59.8%) reported regular (at least weekly) use of heroin, specifically. The remaining minority reported regular non-medical use of prescription opioids (n = 12, 13.0%), or use of both heroin and prescription opioids on a regular basis (n = 11, 12.0%). The remaining 14 participants either reported intermittent use or were missing this data on the frequency of opioid consumption on their survey form. No significant differences in preference for heroin or prescription opioids were found between male-and female-identifying participants or between white and non-white participants.

A subset of 51 individuals (55.4% of the full study population) discussed their relationships with drug suppliers in their interview and, thus, were included in the qualitative data analysis presented here. Among that subset, the proportion of male-identifying participants who are non-white is nearly identical to that in the full study population (n = 13, 37.1% and n = 21, 35.6%, respectively). Among female-identified participants, however, individuals who discussed consumer–supplier relationships were almost exclusively white (n = 13, 81.3%); race data is missing for 2 female-identifying participants, and the remaining female participant identified her racial group as “other,” indicating that she preferred to be designated as “Italian.” (see Table 1). Though many participants reported having social and/or commercial connections to multiple dealers, all but one participant in this subset (n = 50, 98%) reported using a single, “primary” dealer from whom they prefer to procure opioids the majority (if not all) of the time.

First encounters with primary dealers

About half of the participants in this study reported meeting their primary dealer through mutual participation in the drug economy. A Puerto Rican man in his early 30s described meeting his primary dealer of the past 5 months in this way: “Yea, I met him on the streets and started buying some stuff. Then he gave me his number and ever since, I’ve been calling

him." Others reported meeting their primary dealer through other clients or through low-level "runners" who sell and deliver drugs on behalf of someone else. The following description from a 40-something white woman who lived in a Providence suburb is typical of this pattern:

Respondent: Like I mean because first we had someone that had to, it was like the middle man, he had to call them. And then finally we got their number. I mean at least for a year. Now it's probably like a year and a half.

Interviewer: And so, this doesn't sound like this original person you bought from—this wasn't someone that you knew prior to starting that, like, client-retailer relationship.

Respondent: No. It was like someone else got it from that person. And then we got the number so we could call it ourselves and wouldn't have to deal with [the middle man] anymore.

Though this process of relationship development was described by other participants, few were as specific as the above participant about the length of time required to develop that mutual trust. Thus, it is hard to know if this experience is typical in that sense.

Some participants reported multiple axes of social intimacy with their primary dealers, regardless of how they and that primary dealer first met. According to a different Puerto Rican man in his 30s who regularly uses heroin, he and his dealer have known each other "for a lot of years." He said, "I go to his house sometimes when he's got a party or something. I go to his house, you know, with his family, they know my family and everything." Many others described friendships dating back to their childhoods. One young white man in his early 20s used kinship terms to describe such individuals from whom he regularly sourced illicit and prescription opioids: "Yeah, [I knew them] before I started doing heroin and what not. They're pretty much my friends. One of them is my best friend, like my brother."

Dealers' concern for product safety

Several participants reported that their dealer was indifferent to the presence of fentanyl in the drug supply they were selling or were likely to outright lie about its presence. An African-American man in his 60s who has been a daily heroin user for several decades offered the most pessimistic view:

Interviewer: Is this something that you've ever talked about with the people that you buy it from?

Respondent: Yeah, a couple people, they'll tell you that. A lot of people like to say that they don't have [fentanyl] in there. And you can't go with what they say because they'll sell rat poison if they think you'll buy it anyway. They won't tell you anything. They'll tell you the drug is the bomb when it's garbage.

However, the large majority of participants spoke about their primary dealers going out of their way to alert clients to the presence of fentanyl or even to avoid selling fentanyl-

contaminated product completely. Some reported, just as Sandy did (described in the introduction), that their dealer explicitly refuses to sell fentanyl and would never knowingly do so. One man in his mid-50s insisted, confidently, that this was the case with his primary dealer:

Interviewer: Does your guy deal to other people? Like does he have some type of business?

Respondent: No, he only does this once a while. He just deals to me and maybe two or three other guys.

Interviewer: Have you ever had an opportunity to talk to him about fentanyl and dope and the quality of the products you…

Respondent: Yeah.

Interviewer: What does he have to say?

Respondent: If there is fentanyl, he will throw the batch away.

This individual could offer no first-hand knowledge of how their primary dealer gained such detailed knowledge about the chemical content of their drug supply, yet reported a high level of certainty that this work was, somehow, someway, being done on his behalf.

Other participants who reported their primary dealer will not knowingly sell fentanyl also stated explicitly that their dealer employs a reliable method of some kind for detecting fentanyl in their supply. One participant implied that his dealer “tasted” the product before selling it and determined its potency in this way, and another reported being the recipient of “freebies” that were explicitly given to her for the purpose of “tasting” new product on behalf of a dealer. Aside from these instances, though, no participants were able to describe or identify any concrete mechanism to detect the presence or absence of fentanyl employed by their dealers. As one white man in his early 20s described his awareness of his dealer’s “screening” activities as follows:

Interviewer: So you’re under the impression that he actually tests his heroin?

Respondent: I know he does.

Interviewer: You’ve seen him do it?

Respondent: Yeah. I know he does it, but I don’t know the chemical. He never told me what it is.

Interviewer: What do you think he would do if a batch ever turned up as fentanyl?

Respondent: I don’t know. [Laughs]

Interviewer: He hasn’t had to deal with that yet?

Respondent: He won't, because these guys [know] what he does. And he knows what they do.

In contrast, most participants simply relied on faith, buttressing that faith with circumstantial evidence that they found significant. For example, an Hispanic man in his early 40s reported buying heroin from an individual who, he claims, was high enough in the drug supply chain to control the quality of their product:

> [My primary dealers] stay away from that….When you get a certain amount of quantity, you know what you're getting. It's not like you're getting shit that's already worked with. When you're getting a certain amount of quantity, it comes wrapped up a certain way. You know that what you're getting is the real thing.

Finally, some additional participants who did not explicitly state that their dealer refuses to sell or tests their drug supply for fentanyl still described buying from their primary dealer as a deliberate fentanyl avoidance strategy: "I have one connect that I go through, and he don't mess with it. So I just stay with him."

> "It's not as safe to go to the number 2 guy."

Though a few participants said that they would only buy heroin from one person—insisting that they would rather abstain than buy from someone else less trusted—most reported having several contacts available, which they would activate if their primary supplier had no product or was for some reason unreachable. In Sandy's view,

> You can't have [just] 1 guy. You need 3 guys. One guy, you know, he's got this baby mama screaming at him. One guy's in court. The other guy's probably shopping–….so that's how we get to our second or third choice. But there is like a threshold at which point you're like: good person number 1, good person number 2, good person number 3, and screw all these [other] people.

The drawback, almost universally described, of calling up the "number 2 guy" was a potentially riskier encounter with less-familiar product. This was illustrated by a recent experience recounted by a white man in his 20s:

Respondent: I almost overdosed. I kind of had to be smacked around a little bit and woken up, but the kid that I was running with likes [fentanyl]. He lied to me and told me it's not that. Then when I go and do it, you know, I pass out and not realize what's going on.

Interviewer: Was this a situation where he was sharing his batch?

Respondent: Yeah. Well, I couldn't get it from my boy. So he'd get it. I give him the money and be like, "Yo, make sure it's not fentanyl." And he wants to get that because the other stuff doesn't do it for him. So he'd lie to me, and then I'd go and do it. Then next thing you know, I'm almost overdosing.

This kind of duplicity, while always a risk, wasn't described as typical, however. Most described the problems that arise from buying from a "number 2 guy" as one rooted in a mutual lack of trust and familiarity, not in the other person's dishonesty. A white man in his 30s described the situation as follows:

> No, it's just like, "I can get you a half gram," or "I have shit, call me." You know that kind of shit? You never met him, you never did nothing with him, but you have a number in your phone, nobody else is answering, you're sick, you call him, now you have no opiates and you're sick. You try to do a bag and fucking next thing you know you're waking up in a hospital. You know, a lot of stuff can happen, you know?

As he and others described, when buying from a less familiar dealer, the drugs one acquires may have passed through a different set of hands on its way down to the consumer. The end product being sold may be different enough in purity or chemical composition to precipitate an overdose if a buyer consumes what they perceive to be a "typical" amount of the drugs they are used to purchasing from their primary dealer.

This point was made quite explicitly by a white man in his 60s who was recruited for this study while in a hospital only a few hours after he experienced an accidental opioid overdose. Reflecting on the incidents of the day, he recounted calling his "number 2 guy" for heroin that morning—and described why he would have preferred not to.

Respondent: I do have a number 1 guy [dealer], yeah.

Interviewer: And about how much of the time does he get your business?

Respondent: He gets my business like 90% of the time. I have another alternative that I use. And my number 1 guy wasn't available today so I went to my number 2 guy, which is probably not as safe.

Interviewer: What makes you say that?

Respondent: It's not as safe to go to the number 2 guy. The number 1 guy is a lot safer to deal with.

Interviewer: And what makes you say that?

Respondent: He could basically assure me that there's no fentanyl in his product. And I've been dealing with him for five years and I've never had a problem. This number 2 guy I have only known a couple of months and now I've already had a problem with his product. And I wouldn't in the least bit doubt it if the product did have fentanyl in it. Because using the small quantity that I used and to overdose on it, it probably was cut with fentanyl, which caused me to overdose.

Relatedly, eight individuals from the full cohort of 92 who participated in an interview for this study were recruited from the emergency department of a local hospital after experiencing a non-fatal opioid overdose, including the man quoted above. Half of those reported being intermittent users, typically having very limited exposure to opioids. They all attributed their overdose to poor decision making that led to their uncharacteristic use of opioids in that event. The other overdose survivors interviewed in the hospital emergency department reported using heroin regularly. When asked what about this day was different from all other days, all of these individuals reported obtaining heroin from a less familiar

source—either because they were given unfamiliar heroin by someone else or because their primary supplier could not be located, prompting them to call their “number 2 guy.”

Mutual care

Relatively few women in this study reported having socially intimate, trusting relationships with their primary dealers. Yet, those who did spoke at length about the ethos of mutual care that developed out of what began as the most impersonal business relationships. Sandy described her connection with Eric—and with some of the other trusted individuals from whom she buys heroin—as some of the most familiar and trusting relationships in her life.

> I was just with [Eric] the other day, and I said, “Yo, how’s your stuff,” and I said, “I don’t want to buy [fentanyl] from you.” And he’s like, “[Sandy], everybody’s got fentanyl, and I don’t want to buy it.” So, he’s not even picking it up… He’s like, “I’m not going to serve people that.” So, there’s actually dealers that care. I know you guys don’t think they care; they actually care. I mean, some of these guys we’ve been with for years. You know, they’re family. We know where they live. You know, we got to that level. [My partner] and I are different. We’re good girls. They know our lives. We get to know them. And a different level. When you see this person sometimes three times a day, you become friends with them. You can’t help it. You know, you’re in their life. You talk to your dealers more than your parents.

Sandy’s spouse, with whom she uses heroin almost daily, echoed this sentiment, claiming that Eric regularly looks after them in more ways than simply refusing to sell fentanyl:

Interviewer: Do you trust this person [Eric]?

Respondent: Oh, yeah.

Interviewer: What makes you trust him so much?

Respondent: Because I know he’s not out to kill people. He’s not out to like, “all right, let me cut this with fentanyl.” He won’t even cut it like to stretch it to make extra money. You know what I mean? He’s not even that type to do it like that. He’s just very - even like after I meet him he’ll call like a couple minutes later. Are you safe? Are you all right?

Interviewer: He’ll check up on you afterward?

Respondent: Check everybody out. Make sure that we got back to the car. Make sure no cops are around, like snooping around, stuff like that. Like he’s just not out to do any harm to anybody. And then my other guy, like if he’s not around certain times, so my other guy, like I trust him as far as safety wise too. I do trust him with the material too because it’s the same thing. He’s not out to get people - like he wouldn’t want to kill his customers. Many times we’ll say come on, get the fentanyl, get the stuff with the fentanyl, they won’t do it.

Another white woman, in her late 20s, claimed that her dealer would sometimes sell heroin that contained fentanyl, but reported that this person could be counted on to be honest about whether fentanyl was present in any given batch. More than this, though, she reported that

her dealer had come to her to obtain the overdose-reversing drug naloxone. She said that he, knowing that she had been trained to reverse overdoses and had received a naloxone rescue kit from a local syringe services program, called her one night to assist with an overdose he was witnessing:

Respondent: I guess he didn't really have a habit, and he did a little bit, and he went out. And the kid, my dealer called me saying that he went out and I could hear him gasping. So I ran there and he couldn't find the Narcan that I gave him. Excuse me. So I ran all the way back to [the apartment where I live], got it, we hit him with it, and then he didn't come through and then 15 minutes later again we hit him again. And then I rubbed his chest and he came through…

Interviewer: …And the person that you buy from was, I just want to make sure I heard you correctly. So like you were doing whatever you were doing—

Respondent: —And he called me.

Interviewer: And your dealer was with this person [who overdosed]. Respondent: Uh-huh.

Interviewer: Was the person who overdosed someone you already knew? Were you kind of like –

Respondent: No, I didn't know him at all.

Interviewer: So why did your dealer call you?

Respondent: Because the night before that, I had just taught him how to use Narcan.

Interviewer: You trained your dealer how to use Narcan?

Respondent: Uh-huh…I had given it to him the night before and he couldn't find it because he put it in his trunk. And instead of going looking for that, I had him bring me right to [my apartment], because I knew I could get it there. So –

Interviewer: And so was the person in overdose transported to [your apartment] or were they already at [your apartment]?

Respondent: No, he was at the dealer's house.

Interviewer: He was at the dealer's house also. Then you went to [your apartment], then the dealer's house…

Respondent: …He really, yeah, and he just asked me [again] this morning. He's like I need some more Narcan. He's like I'll pay you for it.

Rhode Island's current 9–1–1 Good Samaritan Law, which provides limited immunity from criminal prosecution for drug possession when emergency responders are called to the scene of an overdose, was enacted in July 2016 (Office of the Governor, 2016). At the time that this interview was recorded, the law had been in effect for nearly 9 months.

When you have no number 1

Participants of color—especially women of color—are statistically under-represented in the subset of individuals included in this analysis. Of those who were included in that subset, however, several reported having no primary dealer and, consequently, little control over the content or quality of the drugs they purchase. A man in his 40s who reported using opioids (typically prescription medications) 3–4 times per week on average—one of the few African-American men recruited for this study—reported product inconsistencies and framed those reports in a way that signaled a low level of trust with the person from whom he was buying.

Interviewer: Do you have a regular dealer?

Respondent: Not really, no. No, kind of whoever I bump into. Interviewer: You didn't have any quality issues?

Respondent: Oh yeah. Nowadays you do more than ever. It's probably bringing it back to you were saying, this cutting it, debasing it and everything else now. For all you know, you're probably buying some baby powder.

Another non-white participant, a Native American man in his late 30s who reported using heroin 5–6 days per week on average, similarly reported having no reliable contacts with whom it would be possible to build a meaningful relationship by describing a recent heroin purchase.

Interviewer: Would you be willing to walk me through the purchase that you made a week ago? Where you went, what you did, how you found the person kind of — Not exactly where you went, but you know what I mean.

Respondent: A week ago I felt like I wanted some drugs. So, I walked down to an area where a lot of people were at that I would know. Like [this place], for instance, or whatever. When you see a lot of people out there, usually trying to buy drugs and things like that. And so it's infamous for buying drugs. Certain places are infamous for them people using drugs out there. You'll see them out there actually doing drugs. So, I would walk up to someone like that, that I know that's into that, and I would ask them, "where can I get it?" And then would either call someone or even go with me to place —

Interviewer: Is that consistent? Does that consistently work? Is that a good strategy for you?

Respondent: It's my best strategy. It's still the only strategy that I really have, because I personally don't know anyone personally to really call and be like, "Yo."

Several women in this study (all white) and a number of men endorsed the idea that dealers, in general, cannot be trusted to tell the truth, let alone act in their best interest. The sample of non-white participants included in this study is very small, thus limiting the ability to draw conclusions about race versus less frequent substance use as a determining factor in shaping social relationships; however, it bears mentioning that descriptions of extreme social

isolation in the drug market, such as those immediately above, were only shared by male-identifying participants of color.

Discussion

The findings of this study suggest that, for many people who use drugs in Providence, Rhode Island, maintaining long-term relationships with trusted dealers is a key strategy for reducing the risk of substance use-related harm. Though not universal, a sizable number of participants reported typical behaviors from their dealers that align with the goals of consumer protection (i.e. refusing to sell fentanyl or openly communicating with clients about the presence or absence of fentanyl in heroin being sold), quality assurance (i.e. self-designed methods of "testing" heroin for fentanyl prior to selling it, seeking feedback and checking in post purchase), emergency first response (i.e. procuring naloxone and facilitating overdose reversal), and other forms of social and logistical support. In other words, some people who use opioids maintain generally positive relationships with their dealers, and those relationships appear to be protective against overdose as well as conducive to safer substance use behaviors.

The findings of this study also reveal that access to these potentially protective consumer-supplier relationships is not universal. Though the sampling method and the sample size of this cohort precludes any meaningful correlation analysis, several trends in the data bear explicit mention. First, male-identifying participants were much more likely than female-identifying participants to report a close relationship with their primary dealer with roots in a pre-existing friendship. Whatever the cause, it is possible that women are likely to face additional barriers to trust and social intimacy in these relationships—not least of which because they are more likely to need to build those relationships from scratch with each new supplier they meet. Second, though few people in this cohort reported having no meaningful relationships with suppliers, typically relying on the ability to buy from strangers or poorly-known acquaintances when buying drugs, the concentration of these reports among male-identifying participants of color (especially in a state like Rhode Island whose population is predominantly of white race) suggest that these individuals may be vulnerable to social isolation and, subsequently, greater risk of opioid-related harm than their white counterparts.

Further, this study predominantly included individuals who were already well connected to and regularly receiving services from a syringe services program or other community support organizations that distribute safer injection supplies and provide services with a harm reduction approach. Evidence of syringe service program's protective effect against the spread of HIV and other blood-borne diseases is very-well documented (Abdul-Quader et al., 2013; Cooper et al., 2012). The individuals included in this study, many of whom appear to face a lower risk of overdose thanks, in part, to their supplier, have likely also significantly reduced their risk of overdose through receipt of harm reduction services. It is conceivable that reliable receipt of such services is an indicator of the social support networks that many of the participants in this study already enjoy. In other words, it is possible that individuals who have fostered deeper relationships with harm reduction staff may be more likely to have also fostered deeper relationships with their suppliers—using the same risk mitigation strategy in multiple domains of their personal lives. If this is, indeed,

the case, then structural barriers to safer injection supplies and social barriers to trusted consumer-supplier relationships would likely have synergistic effects—amplifying both the risk of infectious disease and the risk of overdose among some populations while jointly reducing those risks in others. Future studies should investigate possible correlations between structural (macro-level) risk factors, socio-relational (meso−level) risk factors, social capital, and incidence of overdose and other substance use-related harms.

Our findings are congruent with those found in the North Carolina study (Rhodes et al., 2019). Participants in that study also reported using trusted dealers as a personal fentanyl-avoidance and overdose-prevention strategy. In addition, participants in the North Carolina study indicated that their dealer stopped selling a particular batch after “a lot of people OD’d,” just as many participants in our study reported doing (Rhodes et al., 2019). Importantly, the study presented here also lends support to two conclusions put forward by the authors of the North Carolina study. First, both studies indicate that distinctions between drug “sellers” and drug “consumers” are often muddy. Many people in both studies reported buying and selling from friends, from individuals who also use, or from individuals whom they often use with. This fact throws into sharp relief the contradictions inherent in many states’ newly adopted “drug-induced homicide” or “death by distribution” laws, which typically allow for homicide charges to be brought against a “seller” believed to have sold drugs that resulted in an overdose (Blanchard, 2019; Mulvaney, 2017). Second, the findings of both studies imply that removing access to trusted dealers may put clients (who rely on those dealers for their fentanyl avoidance and overdose prevention effects) at immediate risk of overdose. Indeed, for many individuals in this study, the inability to access a trusted supplier was reported as the specific event that precipitated their most recent overdose.

The policy implications of these findings are significant. Put bluntly, arresting a dealer may directly contribute to overdose within their client population. Overall, the impact that drug policy, public health interventions, and/or law enforcement responses to substance use may have on the protective strategies that people who use drugs have created for themselves remains poorly understood. Without such understanding, good-faith attempts to disrupt macro-level drivers of the opioid-overdose epidemic (police sweeps, dealer take-downs, sudden pain clinic closures, etc.) may in fact only result in creating more harm among those who are already at risk (Carroll, Rich & Green, 2018). In the context of such disruptions, at a minimum, action should be taken to coordinate with public health interventions to reduce the risk of unintended consequences (Carroll et al., 2018).

Further, the Rhode Island legislature joined numerous other U.S. states in passing its own drug-induced homicide law in 2018. This new law allows for a life-sentence to be handed down to individuals found guilty of distributing illicit substances when those substances were implicated in a fatal overdose (Shihipar & Peterson, 2018). As of January 2020, only five cases in total have been brought under this new law, yet coverage of these cases have been widespread in local and national media (Associated Press, 2019; O’Laughlin, 2019; U.S. Attorney’s Office, Western District of Rhode Island, 2019). The full impacts of these prosecutions on individuals who use drugs in Rhode Island and the relationships upon which they rely to navigate an uncertain drug market remain unknown, though many have suggested that further criminalization through these laws are likely to have little impact on

substance use other than hindering 9–1–1 calls during an overdose (Peterson et al., 2019). Nevertheless, mixed-methods research indicates that substance use and illicit drug distribution cannot be effectively deterred through increased threat sanctions and arrests (Bailey, 1983; Friedman et al., 2006, 2011). Research on criminal deterrence has also concluded that efforts to deter through increased criminalization simply restrict the characteristics of illegal behaviors, altering how (not whether) individuals produce or distribute illicit substances, occasionally resulting in increased risk to consumers of substance use-related harms (Barratt, Chanteloup, Lenton & Marsh, 2005; Dickinson, 2017; Friedman et al., 2006). Drug induced homicide laws should, therefore, be thought of not as deterrence strategies but as selective pressures that change the shape of the drug market. For individuals who rely on trusted suppliers for survival in an increasingly deadly drug market, this market pressures produced by this law—ostensibly enacted in their name—may simply serve to disrupt the one lifelines they currently have.

These findings should be interpreted with certain study limitations in mind. Data collection was carried out in a single urban center—Providence, Rhode Island—at a time when fentanyl was still a relatively new feature of the local drug market. This data may not be representative of other regions with different populations or different historical changes in the drug supply. The individuals who participated in this study were predominantly recruited through direct service points and may not be representative of other people at risk of overdose who are from different (i.e. more affluent) socioeconomic backgrounds or who do not actively seek harm reduction services of any kind. Further, no demographic information was collected from participants about their primary or secondary dealers. Thus, this study is unable to assess generational differences among dealers (especially different social norms between older and younger—or more experienced and less experienced—dealers). Nor can this study elaborate how risk environments faced by people who use drugs may differ according to whether or not their primary dealer also uses drugs.

Finally, female-identified participants included in this qualitative study were almost exclusively white. Based on a review of the history of data collection activities, this discrepancy appears to have resulted due to an unanticipated confluence of sampling strategies, selection of recruitment locations, and timing of hypothesis generation. Regardless of the cause, female-identified participants of color are notably under-represented in this analysis. Future studies should strive to correct this imbalance by ensuring that the experiences and perspectives are adequately sought out across demographic strata—especially women of color and sexual and/or gender minorities of color.

Conclusions

In summary, these findings suggest that socio-relational factors, especially interpersonal relationships between individuals who use drugs and their suppliers, significantly impact the synergistic relationships across multiple substance use-related harms in today’s opioid-overdose epidemic. Evidence-based prevention strategies that are based on an awareness of —or even designed to harness—the positive and protective relationships that people who use drugs have already constructed for themselves are likely merited. Policy responses to the opioid-overdose epidemic should be organized around proven harm reduction and overdose

prevention strategies, but, as this study indicates, there may be merit in considering the impact of those approaches on networks of people who use drugs, not simply on individuals.

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Table 1

Participant demographics (Providence, Rhode Island).

Female participants	**Discussed dealer[a] (*n* = 51) *n* (%)**	**Full cohort (*n* = 92) *n* (%)**
White	13 (81)	19 (58)
African–American	0 (0)	1 (3)
Nat. Hawaiian or Pac. Islander	0 (0)	2 (6)
Native/Indigenous Amer.	0 (0)	1 (3)
Asian–American	0 (0)	0 (0)
Other	1 (6)	3 (9)
Missing	2 (13)	7 (21)
TOTAL	**16 (100)**	**33 (100)**
Male participants	***n* (%)**	***n* (%)**
White	12 (34)	22 (37)
African–American	4 (11)	6 (11)
Nat. Hawaiian or Pac. Islander	4 (11)	6 (11)
Native/Indigenous Amer.	1 (3)	2 (3)
Asian-American	0 (0)	1 (2)
Other	4 (11)	6 (11)
Missing	10 (29)	16 (27)
TOTAL	**35 (100)**	**59 (100)**

[a]Participants who "discussed [their] dealer are those who spoke explicitly about their relationship with the individual(s) from whom they purchase drugs during their interview. This includes (a) participants who were directly asked to describe their relationship with their dealer following the generation of this hypotheses and (b) those participants who organically spoke about their dealers without being prompted to do so prior to hypothesis generation. (See study methods for more detail).