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Injecting alone

The importance of perceived safety, stigma and pleasure for solitary injecting

Abstract

Many people who inject drugs (PWID) inject when they are alone which increases the risk for drug-related mortality, and the majority of overdose-related deaths occur among solitary users in residential environments. Drawing on qualitative data from interviews with 80 PWID in Norway, this study explores the complex practices of solitary injecting. The analysis illustrates that the risk environments in which they participated involved high levels of distress, fear and stigma that made them prefer solitary injecting. This involved a perceived notion of safety from an unpredictable social environment. Stigma was described as causing additional harms and they therefore wanted to hide their drug-using practices. Finally, injecting drug use involved contextual pleasures that were maximised by injecting alone. The study illustrates how the risk environment the PWID inhabited caused additional harms, by which solitary injections was rationalized, despite its increased mortality risks. Future harm-reduction initiatives should reflect this important aspect.

Keywords: injecting drug use, solitary injecting, risk, pleasure, stigma.

Introduction

The burden of disease caused by drug use has continued to increase during the past decade (UNODC, 2021). In Europe, drug overdose is the main cause of death among high-risk drug users (EMCDDA, 2018; UNODC, 2021), of which drug injection is one of the leading risk factors (Degenhardt et al., 2011; Mathers et al., 2013). Norway is one of the countries in Europe with a high and stable overdose-related mortality rate (EMCDDA, 2020, 2021; Gjersing, 2021). This is partly due to a persistent culture of injecting poly-drug use (Gjersing & Bretteville-Jensen, 2014; Gjersing & Bretteville-Jensen, 2018), and the fact that many people inject drugs alone (Gjersing, 2017; Gjersing & Helle, 2021), which eliminates the opportunity to intervene in a timely manner (Papamihali et al., 2020).

The number of people who inject drugs (PWID) in Norway is estimated to be between 7400 and 10 500 (Burdzovic & Amundsen, 2018). In order to reduce the drug-related mortality, the Norwegian Government introduced a national overdose strategy in 2014. Several preventive measures were implemented as part of the strategy, such as the "Switch"-campaign, which encouraged PWID to switch from injecting to safer intake methods (e.g. smoking). PWID were also encouraged to avoid poly-drug use, and to be aware of reduced tolerance after periods of abstinence (Helsedirektoratet, 2019; Helsenorge, 2021). The use of harm reduction services was also expanded, such as the take-home naloxone program, drug consumption rooms (DCR), which now exist in two cities in Norway: Oslo and Bergen, and the establishment of heroin-assisted treatment in 2022 (Edland-Gryt, 2018; Helsedirektoratet, 2019). Additionally, encouraging PWID to inject together with peers has become a widespread overdose-prevention strategy aimed at individual behavioural change (Helsedirektoratet, 2019; Winiker et al., 2020). However, minimal research has been conducted to understand the reasons why PWID inject alone, despite the elevated risks (Bardwell et al., 2019; Winiker et al., 2020). While harm-reduction strategies have focused on individual-level behaviours, some studies show that the choice of drug-use environments is shaped by factors such as perceptions of unsafety, shame or avoidance of legal prosecution (Rhodes et al., 2007; Small, Moore, et al., 2012; Winiker et al., 2020). This may help explain the limited effectiveness of interventions that aim to prevent solitary injections

among PWID (Winiker et al., 2020). To determine effective harm-reduction interventions, there is a need to understand factors that influence the setting in which injections are performed and why many PWID prefer to inject alone.

In this paper, we explore the complex practices of solitary injecting as expressed by a large group of PWID. Based on qualitative data from interviews with 80 Norwegian PWID, the aim is to study the meanings, perceptions and possible rationales associated with such a drug-using practice. The qualitative approach is sensitive towards the lived experiences of those under study and helps provide new understandings of solitary injecting drug use. This insight should help inform future harm-reduction interventions.

Injecting drug use environments

The setting where drugs are injected represents an important dimension in the production of drug-related harms (Small, Moore, et al., 2012). Injecting in public places is associated with elevated risks (Carlson, 2000), deriving from hasty injections due to fear of interruption or arrest. The public exposure involved in such settings may also cause feelings of shame, leading PWID to prefer private settings for their drug use (Hagan et al., 2007; Small et al., 2007). Public injections are therefore described as a situational necessity, resulting from homelessness or withdrawal, rather than an active choice among PWID (Rhodes et al., 2007).

Injecting alone may entail lower rates of risk behaviour by avoiding multiple use of drug paraphernalia and thus preventing cross-contamination (Hagan et al., 2007). However, those who inject alone experience elevated risks of mortality and morbidity (McCrae et al., 2020). For example, naloxone programmes require another person present for administration. As such, the majority of overdose-related deaths occur within residential environments (e.g. private residences, supportive housing or shelters) and among those using alone (Bardwell et al., 2019; Papamihali et al., 2020; Tsang et al., 2019).

Quantitative studies exploring solitary drug use (not exclusively injections) highlight factors such as convenience, stigma, peer pressure to share injection equipment and the avoidance of legal consequences or violence, as common denominators (Hagan et al., 2007; Papamihali et al., 2020). In

one such study, Winiker et al. (2020) found competing priorities in PWID's choice of drug-using environment, such as withdrawal, stigma, lack of trusted friends, fear of legal responsibility if present during another person's overdose, as well as a desire not to share drugs with other PWID. Other studies have found similar results (Bardwell et al., 2018; Kirst, 2009), and highlight how social constructs of masculinity may affect overdose risk and solitary drug use (Bardwell et al., 2019). Such factors may help explain the limited effectiveness of interventions aimed at individual-level change (Winiker et al., 2020). Without undermining the importance of these strategies, critiques have suggested that individual behaviour is de-contextualized from the environments in which it occurs, and may fail to account for the greater socio-cultural factors involved in solitary injections (Rhodes et al., 2007). This invites further discussion of social and environmental factors, and how they may help inform an analysis of the complex reasons for injecting alone.

Risk, stigma and pleasure

Alongside a focus on the individualization of risk, scholars emphasize the importance of socio-structural factors influencing decision-making regarding where and with whom injecting occurs (Winiker et al., 2020). In contrast to behaviourist models of research, such studies highlight how perceptions of safety and risk are influenced by social relations (Bourgois, 1998; Rhodes et al., 2004). As such, Rhodes' (2002) concept of 'risk environment' emphasizes social and environmental factors, and how they may shape individual, community and policy responses to risk and the reduction thereof. Thus, the various ways risk is experienced and lived by the PWID in their everyday lives may shape their practices as well as their choice of environment for injecting drugs (Rhodes et al., 2007).

Research suggests that PWID are heavily stigmatized both by the public and by health professionals (Luoma et al., 2007; Simmonds & Coomber, 2009). This may be related to perceptions of injection as an undesirable mode of use and due to its associations with HIV (Rivera et al., 2014). Enacted drug use stigma entails be treated negatively as a reaction injecting drug use, such as dismissive attitudes or language with a judgmental demeanor. This may contribute to felt stigma and reduced self-worth (Muncan et al., 2020; Paquette et al., 2018). Goffman (1963) relates stigma to an attribute that is

discrediting and how those stigmatized tend to internalize aspects of a 'spoiled identity' (Goffman, 1963; Simmonds & Coomber, 2009). This form of stigma may lead to riskier injections, by which PWID take measures to hide their drug use (Latkin et al., 2010; Rivera et al., 2014).

Additionally, the concept of pleasure is important for understanding the varying practices of illicit drug use (O'Malley & Valverde, 2004; Zajdow, 2010). While there has been an absence of discourses of pleasure in the drugs field, Moore (2008) argues that this is an essential part of understanding the subjective motives for drug use. This may include 'a desirable bodily experience arising from the interaction of pharmacology, subjectivity, culture and history' (Moore, 2008, p. 354), as well as the specific activities related to the drug use itself (Tsang et al., 2019). Importantly, the concept of pleasure also extends beyond purely physiological experiences and includes a focus on contextual elements (Duff, 2008). Zajdow (2010) argues that there is rationality not only in the drug use, but also in the techniques used for preparing drugs and how they impact on the experience of pleasure. Thus, pleasure needs to be considered as more than a product of intoxication, because 'the pleasures that emerge in consumption events extend beyond the (…) pharmacological effect of the drug' (Duncan et al., 2017, p. 6), to include the various 'contexts, practices, bodies and performances that inhabit and transform each consumption event' (Duncan et al., 2017, p. 8).

The aim of this study is to explore the various accounts of injecting alone as well as possible meanings and explanations for why such behaviours are preferred, despite the elevated risks. We rely on the concepts of risk environment, stigma and pleasure, and study the various meanings and rationales associated with solitary injecting.

Methods

This paper is based on qualitative interviews with 80 Norwegian PWID, aged 23-63 years (mean age 45), of whom 77% were males. The sample reflects the overall population of PWID in Norway (Gjersing & Bretteville-Jensen, 2018). Almost all participants received financial support such as work assessment allowance or regular social benefits provided by the Norwegian welfare system. In Norway, a person is considered homeless if he or she has no privately owned or rented accommodation, or has unstable

positions in the housing market such as shelter for homeless people (Dyb, 2017). In this study, 6 participants owned their own apartment, almost 1 out of 3 had an unstable housing situation such as living in a shelter, half of the participants was provided a municipal rental apartment, and the remaining had other living arrangements such as living with a partner or provided unclear information. Although some described unstable housing, all participants described various private spaces for solitary injections. The information about income and housing-status does, however, have limitations because the information provided was specified in most, but not all interviews due to unclear answers. Yet, the sample in a large degree reflects the overall socio-demographic background of the PWID population in Norway (Gjersing, 2017). The majority injected drugs on a daily basis, and 71% of the interviewees used multiple substances (mainly combinations of heroin, amphetamines and benzodiazepines), 19% mainly used amphetamines, and 10% mainly used heroin.

The interviews were conducted face-to-face during October 2019 in five Norwegian cities. To ensure both breadth and variety, interviewees were recruited at low-threshold services such as health services, needle exchange programs, shelters, food delivery and drug consumption rooms. The services received information about the project in advance and informed their clients verbally or in writing. Participants were recruited by the service staff at the services, through snowballing or by the researchers on site. The authors and two trained research assistants conducted the interviews. In order to create an atmosphere where the interviewees could talk freely and undisturbed, the interviews were conducted in separate rooms at the low-threshold services. Before the interviews started, the participants were informed about the aim of the study, issues of anonymity and voluntary participation, as well as the possibility to discontinue the interview at any time.

The interviews were semi-structured and guided by a list of topics covering questions about the interviewees' thoughts on injecting and other intake methods, positive and negative experiences of injecting, risks and risk-prevention strategies, as well as narratives about their participation in street-based drug scenes. As the interviews were carried out with persons under the influence of drugs, level of intoxication, type of drug, and the physical and mental health of the interviewees all affected their capacity to engage in the interviews. This may entail limitations due to ethics as well as the participant's well-being and concentration to be interviewed. Thus, it was a priority for the researchers to assess the

participant's level of intoxication and physical and mental health prior to gain consent, as well as continuously evaluating the participant's state during the interview. Exclusions included those who were overly heavy intoxicated, or where there was doubt related to mental health (as assessed by the staff). Two interviews were discontinued by the researcher, as it was considered unethical to continue due to the participant's heavy intoxication or poor mental health. This involved situations where one participant had challenges to stay awake, and one situation where the researcher assessed that the interview affected the participant's well-being and capacity to take part due to mental health challenges.

The interviews lasted an average of 45 minutes, ranging from 25-60 minutes, were audiotaped and transcribed verbatim. Transcripts from the interviews were thematically coded in HyperRESEARCH. The use of thematic analysis focus on the flexible and reflexive nature of such a research method, independent of theoretical approaches (Braun & Clarke, 2006). Thus, rather than predefined concepts or theoretical lenses, the narratives presented by the participants was our initial starting point. The thematic coding was based on the interview guide and included a broad range of codes: reflections and narratives on injection initiation, risk and risk-prevention strategies as well as descriptions of their day-to-day lives as injecting drug users. Topics that were introduced by the participants during the interviews or emerged from the fine reading of the interviews were added to the code list. The further analysis focused on the stories that were relevant to understanding participants' injecting environment, including the time and setting of injection, descriptions and perceptions of their social environment and injecting drug use, attendance at low-threshold services, as well as detailed descriptions of how and where they preferred to prepare and inject drugs. The next analytical step consisted of fine reading of the selected transcriptions, and identifications of patterns and common themes that led to the classification into the three main categories presented in the results: risk environment and safety, stigma and privacy, and pleasure and context.

All interviewees were reimbursed NOK 200 (approximately 20 €) for their time. The project was approved by the Regional Committee for Medical and Health Research Ethics in Norway (REK), ref.nr.1206091. Any potentially identifiable information has been removed or anonymized, and the interviewees are referred to by pseudonyms. The sample consists of persons who use the low-threshold services. We have thus missed out on the views and experiences of people without established contact

with these services, which may have affected the results. Although the study is based on a considerable number of interviews with PWID, it reflects findings from Norwegian settings and may therefore not be generalizable to other contexts.

Results

The interviewees recounted that they preferred to inject alone, and they offered several contributory reasons. First, the risk environment they inhabited caused distress and fear, and solitary injecting contributed to an increased sense of safety and protection from peers they did not trust. Second, stigma and shame were clearly described by the interviewees and, by injecting alone, they were able to hide their drug-using practices. Finally, the pleasure associated with injecting was a key component. Performing injecting rituals in private settings helped maximize the positive sensations associated with their drug use. The study illustrates important social and environmental factors that influence settings for injecting drug use.

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Risk environment and safety

The interviewees participated in street-based drug scenes, characterized by heightened risks of violence, theft and arrest. As such, safety was described as one of the main reasons for injecting alone, which often took place in their own residences. Although several interviewees had unstable housing, they described various types of residences or private spaces for solitary injections, such as shelters or temporary rented apartments which they mainly referred to as their "home", or "my room". Helge (male, 57) said: *'I guess it's the safety. Nobody comes in. I can lock the door and relax.'* This privacy was presented as important for maintaining a sense of personal safety, as well as enabling a secure and calm space in which to perform their injections. Hakon (male, 55) told: *´I sit alone at my place. I can feel safe and there's no stress around me, because otherwise I get trouble consuming it.'*

Several interviewees occasionally attended a DCR in the two cities these were available, emphasizing the benefit of safety, due to the presence of healthcare personnel. Yet, they described barriers such as noise, theft, or discomfort due to the physical or mental health of drug-using peers. Trygve (male, 47) explained: *'I'm mostly alone. It is safer here [DCR], but it can be too much hustle and bustle and noise, so sometimes it's better to be home alone.'*

Although the DCRs were associated with such negative experiences, injecting outdoors or in public places was described as the most stressful, unsafe and unpredictable environment. This was related to difficulties in injecting in low temperatures, fear of public exposure, and disturbance by the police or security guards. David (male, 39) said: *'I prefer to inject indoors, of course. It's not nice to be out on the street when you're doing it. There's more risk of being caught.'* As such, indoor injections were deemed safer and the interviewees also explained that they were selective with the choice of setting. Oscar (male, 44) said that he preferred to inject alone at home, due to the levels of distrust within the drug scene: *'There's so many crazy things happening in this environment. There's not many apartments where you can visit people and just relax.'* The quote demonstrates how Oscar avoided injecting in surroundings where he felt unsafe and he explained this by experiencing his social environment as unpredictable. Similarly, Per (56) asserted that his last choice of setting was in the homes of people he did not know: *'Because it feels unsafe, you know. I never know what's going to happen next.'*

These concerns were also tied to the risk of theft when using drugs among other people. Alfred (male, 37) injected in both private and public places due to unstable housing. Nevertheless, he said that he preferred to inject alone: *'I'm often alone. I have so many experiences, you know. [Things] disappear when you look away. It's so stressful. It's better to be alone. That's the lesson I've learned, because then you can be safe.'* Several participants echoed Alfred's story, and described thefts when injecting among other people, especially in the event of a non-fatal overdose. As such, solitary injections were considered a form of protection against a risk environment characterized by distrust and fear of being robbed.

The lack of trust between drug-using peers also involved the risk of not being assisted in the event of an overdose. Kine (female, 46) spoke positively about the potential benefits of take-home naloxone and believed it to be an important part of overdose prevention. Yet, she was doubtful about whether it would be used in the event of an overdose. She explained: *'People have become so cynical that you just get robbed and they haven't even called an ambulance.'* Similarly, Marie (female, 60) said that she was worried about overdoses and always had naloxone at home. However, during a recent overdose, the naloxone was not used: *'I did have a take-home naloxone kit at home, but it wasn't used. I didn't like that. That made me a bit (...) I don't know why it wasn't used... I shudder.'*

Marie's story further illustrates the levels of distrust between members of the drug-using milieu. This was also evident in the interview with Kristine (female, 29). She explained why she preferred to inject alone: *'If it's just you, you only have yourself to count on.'* This may seem like a paradox, as no one could assist in the event of an overdose. However, the interviewees described that the risks of theft from and distrust of unpredictable peers took precedence over their potential concerns about being alone when injecting.

These stories illustrate how the street-based drug scenes caused additional harms, inasmuch as the interviewees considered the relative risks stemming from these environments as more pronounced than that of a potential overdose. Even though they were informed and aware of the added risks of injecting alone, this knowledge was undermined by the tensions of unpredictability, lack of trust and exploitation they experienced within these scenes. As such, the prevention measures geared towards individual-level change were subject to an assessment of various risks. The participants assessed the

potential harms from drug-using peers as more salient than those of their injecting practices. Therefore, the sociocultural factors embedded in their physical drug-using environment weakened the preventive effect of such measures, and led the participants to a preference for solitary injection.

Stigma and privacy

Injecting drug use was also associated with feelings of shame, stigma and embarrassment. This was based on various experiences of enacted stigma such as hurtful comments from friends, exclusion from restaurants or dismissive attitudes from health care personnel. For example, Jorgen (male, 47) said: *'When you go out on the town, you meet old friends, and they just shake their heads. It's not fun to be looked down on like that. I got sarcastic comments. I haven't been very social after that.'* Several interviewees also described their own views on PWID before they started to inject and found it challenging to associate themselves with such drug-using identities. Sofie (female, 29) had never injected in public spaces and explained it by the embarrassment she associated with injecting: *'Some people sit on a bench in the city centre and do it, but everyone can see it. 'Here I am', you know. It doesn't feel good.'* Several interviewees recounted similar stories. Other people's eyes were associated with shame and judgement, and some took into consideration the intimidating practice that injecting drug use could represent for people outside the scene. Gunnar (male, 36) said:

> I consider injecting drug use as a private thing. It's not the business of people passing by or the public. I don't think it's OK to use drugs in a park where there are children or families walking around. It's quite frightening for the outside world which has no knowledge of this. So that's why [I inject at home].

The experiences of stigma associated with injecting were highlighted as important for actively hiding their drug use. Helge (male, 57) said: *'I'm usually alone. At home. I want to hide it as much as possible.'* Similarly, Eilert (male, 29) said that he spent much time alone due to his drug use and he experienced it as lonely. Still, he preferred to be alone: *'I'm mostly alone. At home. (…) It's because, when I sit at home and do it, it's my palace, my home. Nobody can judge me for what I do.'* Synne (female, 39) explained in similar words: *'I feel it's a private thing. I feel it's so personal. I think it's the fact that I*

don't get disturbed, that there's no one there to have any reactions or anything I need to consider.' These quotes demonstrate the importance of privacy when injecting and illustrate how the participants tried to avoid the watchful eyes of people passing by. Synne continued her story and described an overdose experience where she had locked herself in the bathroom in a friend's apartment. She was accidentally discovered on the bathroom floor, hypothermic and unable to wake up, and an ambulance was summoned. Although she talked about the incidence as disturbing, she still preferred to inject alone, and explained it by feelings of shame: *'I'm sure my self-image is a bit influenced by being an injecting drug user. It's something I'm ashamed of. And that's also why I hide it.'*

Several interviewees echoed Synne and recounted various efforts to hide their drug use. Even when around drug-using peers, they often went to the bathroom to inject. Mette (female, 49) said: *'I never sit around other people. It's private. I go to the bathroom.'* Others explained that, to ensure privacy, they preferred to lock the bathroom door. Henning (male, 51) elaborated: *'I almost exclusively inject alone. (…) I don't like to show that I do it. It's not a thing to share with others. I go to the bathroom, lock myself in.'* Hege (female, 35) described it similarly and explained her wish for privacy due to injecting in intimate places on her body:

> I always go to the bathroom. Alone. Because I shoot in the groin, so I don't want people to see it. It's probably for my own respect and others'. That's how I would have wanted it to be if people were in my home.

These stories illustrate how drug use was perceived as shameful and stigmatizing. Whilst some described shame associated with injecting drug use in general, others pointed to the importance of hiding when they injected in intimate places. These feelings concerned both drug-using peers, as well as perceptions of how they were perceived by the public, highlighting the complex sources of stigma.

Hanne (female, 52) preferred to inject indoors. Yet, in cases of withdrawal, she found it hard to postpone her drug use and thus injected outdoors. In these cases, she emphasized the importance of finding a space where she could hide and be alone. She said:

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> When I'm so hooked that I must do it outdoors – [then I] have to find a place to do it, use the groin, down with my pants and be very careful that there's no children or any straight people around.

Whether they injected in private residences or in public, participants emphasized the importance of places where they could hide when injecting, secluded from other people. Eilert (male, 29) explained: *'If I do it outdoors and people see it, it's like: 'Oh, are you into that?', right. People judge before they even know you.'*

Eilert's quote illustrates that the experiences of shame associated with drug use caused a sense of otherness, in which they took measures to hide their injecting practices. This sort of stigma was also related to their drug-using peers, and several said that they were uncomfortable when injecting around friends. As such, their perceived stigma was twofold: on the one hand, their identities as injecting drug users caused a sense of shame and societal discrediting, which led them to avoid public injections. On the other hand, the privacy associated with such a drug-using practice also led them to seek out sheltered places where they could inject alone, even when they were in the company of other PWID. Together, these forms of stigma altered the participants' drug use, towards a potentially riskier practice.

Pleasure and context

In addition to stories of safety and stigma, the interviewees also described specific preferences that sought to heighten the pleasures involved in their injecting drug use. These stories did not only cover the pharmacological effects of the drugs, but also involved the contextual elements in which they prepared their dosages, as well as their preferred settings for use. Karl, a male in his early forties, emphasized the importance of the process anticipating the actual sensation of the drugs:

> The process of cooking, searching for the blood to 'respond' and see the blood come into the syringe and push it in. When we do that, it's a way of giving ourselves care (…) It's not just a means of getting the drugs in, it's the whole process.

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As Karl described, the pleasurable aspects of the drugs also involved the 'whole process' leading up to the intoxicating effects. This way of managing his injecting drug use, focusing on the preparation and cooking of the drugs, was deemed as an important ritual to maximise pleasure. Several participants echoed Karl and highlighted the pleasure and comfort in the injecting process. Bjornar (male, 59) lived in a shelter and mainly injected alone in his room. Occasionally, he told the staff to check up on him in case of an overdose. Yet, he said that he preferred to inject alone, emphasizing the calming effect, described as the ability to be *'home alone and listen to calm music.'*

Others highlighted the need for calm and concentration due to difficulties in finding veins after years of injecting. Mathias (male, 59) said that he had overdosed in his bathroom several times and had been saved by his girlfriend. Still, he preferred to inject alone and explained it by his injection routine:

> I prefer to be home alone, and in my bathroom. Close the door, lay a towel over my pants so I don't spill any blood, and I use a tourniquet which I've stolen from the hospital. To be able to concentrate, no fuss.

Mathias' quote exemplifies how the use of drugs was performed in a routine manner, emphasizing the private setting for use, in which he sought peace and concentration, secluded from the outside world. The solitary injections also facilitated increased control of hygiene, temperature and general comfort. Maria (female, 44) exemplified her ideal setting for an injection:

> At home: clean, to know what's been used and that the kitchen counter is clean. Almost always alone. I kind of arrange a ceremony. In the morning, light candles and enjoy myself. Put the news on, the coffee and I have this ceremony around it all.

These stories illustrate how solitary injecting was deemed as more pleasurable and hygienic, in which the participants were able to control both their physical environments, as well the ambience in which they performed their drug use – it was easier to keep the user equipment clean from bacteria and to avoid needles lying around. Additionally, the cold climate in Norway also made outdoor injections more difficult to perform, especially during the winter months. As such, an indoor setting facilitated both an easier injection routine, as well as increased comfort.

Importantly, the solitary injecting also allowed the participants to enjoy the intoxicating effects, without any external interference. These private settings enabled a greater bodily sensitivity, in which they were able to maximise the pharmacologic effects stemming from drugs. Mathias (male, 59) explained: *'Because then I get the most out of it. I have no need to talk or to be social. You need to concentrate, to feel it coming. It's bubbling.'*

Similarly, Hakon (male, 55) emphasized how solitary injections allowed time and space to enjoy the intoxication. He told: *'I need peace around me. Then a cup of coffee and a smoke. It's so good when you've done it, when you've injected it!'.* These sensations of pleasure were often described to coexist with the painful sensations of withdrawal – to "get well". Marie (female, 60) said:

> It's a joy. If you use Dolcontine every day, you are so sick! And the joy of standing [by the stove], to have [drugs], to boil it and then get it into your veins and you get so well! And then you get the kick, and you sneeze and… Ooh, it 's so good when you're sick!

However, the interviewees described relaxation and being able to 'chill out' as an essential part of enjoying the intoxication. Christina (female, 29) had experienced several overdoses, waking up in what she referred to as *'a hell of a bad position'*. Several participants described similar experiences where they had overdosed while they were alone and emphasized the risks associated with solitary injecting. Yet, Christina said that she preferred to inject alone:

> I like that reward, the good feeling. I love to sit there with no noise around me, let the thoughts flow, keep my eyes closed, light a cigarette and dream away on a pink cloud, crawled up in my bed. Sometimes I feel that it's just wonderful when I'm alone and just sit like that with my head hangin'.

As well as being able to 'chill', an important part of the enjoyment was being able to sleep without being disturbed. Alfred (male, 37) described his preference:

> I like the drug consumption room. The only problem is that they don't let you sleep, right, and that's the whole... Digging the intoxication, that's the thing, you know. This is expensive stuff, so it's important to use it as sensibly as possible.

Several interviewees recounted similar stories and highlighted how injecting alone facilitated a sense of presence, in which they were able to enjoy the intoxication, focusing on pleasure, relaxation and heavy sleep without interference. However, these preferences also led to heightened risks in cases of overdoses. These risks were, to a varying degree, acknowledged by the participants, but the possibility for negative consequences were usually outweighed by the positive. Pal (male, 31) sometimes injected with others and said: *'I try to be with others when I use heroin. I think about the risk of overdose and stuff. If something happens to one of us, the other can call [the ambulance].'* Yet, he emphasized the benefits of injecting alone, thereby highlighting the tensions between the risks and pleasures associated with solitary injections.

In sum, the pleasurable aspects of injecting alone were highlighted as a central part of the participants' practices. They were aware of the risks of overdose when injecting alone and therefore occasionally injected together with others or at the DCR. However, injecting with others or in public places were perceived as less hygienic, and the participants experienced barriers such as noise or discomfort. In this context, the private setting allowed for greater peace and concentration, in which participants perceived that they performed a safer injection and maximised the positive sensations stemming from their drug use. As such, the participants' contextual experiences went beyond the physiological drug effects, to also include the physical space in which they injected.

Discussion

We have explored accounts of injecting alone from the perspective of PWID. Based on an extensive number of interviews, the analyses revealed that the participants constructed several rational and positive meanings of injecting alone. First, this involved a perceived notion of safety from an unpredictable risk environment and peers they did not trust. Second, feelings of stigma were described as causing additional harms, producing a wish to hide their drug-using practices from the outside world. Finally, the interviewees highlighted the need for peace and quiet in order to enjoy the pleasures associated with injecting. The study thereby illustrates how the risk environment caused additional harms, by which solitary injections was rationalized, despite its increased mortality risks.

These findings stand in contrast to most overdose prevention and harm-reduction strategies, which largely focus on individual-level behavioural change, and the relationship between knowledge and avoidance of risks (Small, Moore, et al., 2012; Winiker et al., 2020), such as encouraging PWID to switch to safer intake methods (e.g. smoking), to carry naloxone, avoid mixing drugs and injecting alone (Edland-Gryt, 2018; Helsedirektoratet, 2019; Helsenorge, 2021). Although these strategies form an important part of overdose prevention work, it has been suggested that such individual behaviour is detached from environmental contexts that contribute to influencing drug-using behaviours (Small, Moore, et al., 2012). The participants in this study expressed awareness of the risks associated with their injecting practices. However, solitary injecting was perceived to be beneficial as it alleviated the contextual risks stemming from the street-based drug scenes, thus highlighting tensions between the risks and benefits of solitary injections. Other studies have also demonstrated how PWID weigh the adverse outcomes that may arise from using drugs in the company of others, against the risks of injecting alone (Moore, 2004; Papamihali et al., 2020; Winiker et al., 2020). As such, solitary injections may entail both protection and risk (Small et al., 2009). However, injection-related behaviour should be understood in context with the everyday risks that characterize the lives of PWID, in which solitary injecting is perceived to facilitate greater personal control and feelings of safety (Bourgois, 1998; Connors, 1992; Hagan et al., 2007).

The interviewees in this study also described experiences of shame and stigma, and therefore made efforts to hide the injecting drug use, even when around friends. Their discrediting attributes thus led to an internalization of these feelings, as well as a negative self-evaluation that arose from identification with a stigmatized group (Rivera et al., 2014). The embarrassment and stigma associated with injecting drug use may thus lead to riskier injection behaviours (Luoma et al., 2007; Rivera et al., 2014; Winiker et al., 2020), and further contribute to reducing the effectiveness of prevention measures and harm-reduction strategies aimed at PWID (Simmonds & Coomber, 2009; Strathdee et al., 2012).

Additionally, the interviewees described the importance of contextual pleasures associated with injecting alone, stressing factors such as calmness, temperature, perceptions of cleanliness and being able to ‘chill out’. The ability to control one’s injecting environment is tied with having a home or a personal space. Participants occasionally injected outdoors mainly for practical reasons such as stress

due to withdrawal or after opening hours of the DCRs. Although they could be able to find personal spaces outdoors, this was perceived as stressful due to a fear of public exposure or to be disturbed by the police or security guards. Several interviewees occasionally attended the DCRs, emphasizing the benefits of safety and presence of health care personnel. Yet, they experienced barriers such as noise, theft and crowded environments. Instead, although several participants had unstable housing, they described private spaces for solitary injections, such as shelters or temporary rented apartments which the interviewees mainly referred to as their "home", or "my room". Solitary injecting was accordingly deemed beneficial as it allowed for peace and concentration, in which they could enjoy both the drug-induced sensations and the ritual act involved in the drug-using process. These environments allowed autonomy, comfort and feelings of pleasure both before, during and after injecting (Tsang et al., 2019). Similarly, Duff (2008) argues that the pleasures associated with drug use extend the physiological intoxication, to include the contextual elements involved. Pleasure emerges through particular social and emotional transformations enabled through specific consumption routines (Duncan et al., 2017). It is therefore key to understanding the dynamics of space, embodiment and practice, and how they interact with the contextual experiences of drug-related pleasures (Duff, 2008).

The findings in this study illustrate the competing priorities among PWID. Although some may prioritize health or safety by injecting with others (Winiker et al., 2020), solitary injections should also be understood as an adaptive strategy employed by marginalized individuals to manage various and often competing considerations (Moore, 2004; Small, Moore, et al., 2012). These priorities are socially and culturally intertwined (Rhodes et al., 1996), and further illustrate how overdose prevention strategies focusing on individual behaviour change may fail to account for the situated knowledge developed through the lived experiences of PWID (Moore, 2004; Rhodes et al., 2007; Small, Moore, et al., 2012). This invites further discussion of how solitary injecting is influenced by social and environmental factors, and how it may contribute to an improved understanding of such drug-using behaviours. The everyday experiences of PWID are shaped by multiple individual, social and environmental factors, which in turn shape the plethora of drug-using practices (Bardwell et al., 2018). Additionally, the restrictive focus on risks and harm may overlook the pleasurable aspects of illicit drug use (Duncan et al., 2017; Keane, 2003), as well as the complex needs of PWID (Moore, 2004). Scholars argue that such

a narrow focus may be a barrier to responding to drug use in more effective ways, and stress the importance of increased sensitivity to the lived experiences of PWID, their subjective understandings of risks and the imminent pleasures of drug use (Duncan et al., 2017; Moore, 2004). The findings in this study suggest that, although some PWID prefer to inject around others, a significant number are likely to inject alone. Therefore, to address the needs of PWID, harm-reduction strategies would benefit from acknowledging how social and environmental factors influence drug-using behaviours. This involves emphasizing the structural and contextual risk environments of street-based drug scenes, the levels of felt stigma imposed on PWID based on enacted stigma such as hurtful comments or dismissive attitudes, as well as the often-neglected perspective of the pleasures involved in illicit drug use. These perspectives allow for a greater sensitivity towards the differing practices of injecting drug use and how the contextual spaces of drug scenes interact with such behaviours.

In this study, DCRs were perceived as a valuable intervention by the participants, which indicate that DCRs should be made available in more cities. Yet, negative experiences such as theft and crowded environments created barriers to access these services. Small et al. (2012) suggest that this may exemplify a discrepancy between public health and PWID's views of risks related to the drug use settings. The physical environment is thus not only a physical space, but also exemplifies how these settings communicate a wider social stigmatization of PWID, and contribute to feelings of shame and otherness (Rhodes et al., 2007). This suggests novel ways of optimising DCRs which are able to reflect the diverse needs of PWID, including the possibility to enact more pleasurable and positive relations to themselves and their drug use (Duncan et al., 2017; Small, Wood, et al., 2012). While the practice of injecting alone may seem irrational, the findings in this study illustrate the opposite, in which solitary injecting rather became an adaptive strategy for coping with the structural harms experienced by the participants. Eliminating stigma associated with injecting drug use thus remains imperative in in order to allow PWID to feel safe (Muncan et al., 2020; Papamihali et al., 2020). In Norway, there has been an evolvement in the drug policy, moving from a punitive to a more supportive approach. A drug reform was established in 2004, intended to ensure patient rights for people who use drugs. This entailed treatment for their drug use, and the need for specialized health services in order to reduce mental and somatic challenges (Gjersing & Amundsen, 2018). A shift in the society's way of understanding drug

use may also be reflected in the establishment of heroin-assisted treatment. The aim is to help people with opioid addiction to achieve a better quality of life, enhanced individual support, and to reduce the health risks associated with non-medical use of opioids (Oslo University Hospital, 2022). Although drug use is still prohibited, a strengthened health and social care approach may contribute to a direction towards less stigma and a more unified healthcare. Yet, this study illustrates that stigma is still important to address in order to facilitate safer drug use for PWID.

References

Bardwell, G., Boyd, J., Kerr, T., & McNeil, R. (2018). Negotiating space & drug use in emergency shelters with peer witness injection programs within the context of an overdose crisis: A qualitative study. *Health & place*, *53*, 86-93. https://doi.org/10.1016/j.healthplace.2018.07.011.

Bardwell, G., Kerr, T., & McNeil, R. (2019). The opioid overdose epidemic and the urgent need for effective public health interventions that address men who use drugs alone. *American Journal of Men's Health.*, 1-4.

Bourgois, P. (1998). The moral economies of homeless heroin addicts: confronting ethnography, HIV risk, and everyday violence in San Francisco shooting encampments. *Substance Use and Misuse*, *33*(11), 2323-2351. https://doi.org/10.3109/10826089809056260.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, *3*(2), 77-101.

Burdzovic, J., & Amundsen, E. *Narkotika i Norge* [Drug In Norway]. Folkehelseinstituttet (Norwegian Institute of Public Health]. https://www.fhi.no/nettpub/narkotikainorge/bruk-av-narkotika/problembruk-av-narkotika/?term=&h=1

Carlson, R. G. (2000). Shooting galleries, dope houses, and injection doctors: Examining the social ecology of HIV risk behaviors among drug injectors in Dayton, Ohio. *Human Organization*, 325-333. https://doi.org/10.17730/humo.59.3.w483t11p717473k6.

Connors, M. M. (1992). Risk perception, risk taking and risk management among intravenous drug users: Implications for AIDS prevention. *Social Science and Medicine*, *34*(6), 591-601. https://doi.org/10.1016/0277-9536(92)90187-u.

Degenhardt, L., Bucello, C., Mathers, B., Briegleb, C., Ali, H., Hickman, M., & McLaren, J. (2011). Mortality among regular or dependent users of heroin and other opioids: a systematic review and meta-analysis of cohort studies. *Addiction*, *106*(1), 32-51. https://doi.org/10.1111/j.1360-0443.2010.03140.x

Duff, C. (2008). The pleasure in context. *International Journal of Drug Policy*, *19*(5), 384-392.

https://doi.org/10.1016/j.drugpo.2007.07.003.

Duncan, T., Duff, C., Sebar, B., & Lee, J. (2017). 'Enjoying the kick': Locating pleasure within the drug consumption room. *International Journal of Drug Policy*, *49*, 92-101. https://doi.org/10.1016/j.drugpo.2017.07.005.

Dyb, E. (2017). Counting homelessness and politics: the case of Norway. *European Journal of Homelessness*, *11*(2).

Edland-Gryt, M. (2018). *Prosessevaluering av Nasjonal overdosestrategi 2014-2017: Hvordan forebygge overdosedødsfall? [Process evaluation of Norway's overdose strategy 2014-2017: How to prevent overdose deaths?]*. https://fhi.brage.unit.no/fhi-xmlui/bitstream/handle/11250/2571617/EdlandGryt_2018_Pro.pdf?sequence=1

EMCDDA. *European Drug Report 2018: Trends and Developments.* . Publications Office of the European Union. https://www.emcdda.europa.eu/publications/edr/trends-developments/2018_en.

EMCDDA. *European Drug Report. Trends and Developments 2020.* Publications Office of the European Union https://www.emcdda.europa.eu/publications/edr/trends-developments/2020_en

EMCDDA. *European Drug Report. Trends and Developments 2021*. Publications Office of the European Union. https://www.emcdda.europa.eu/system/files/publications/13838/TDAT21001ENN.pdf

Gjersing, L. *Narkotikabruk på gateplan i syv norske byer 2017* . Folkehelseinstituttet. https://www.fhi.no/ml/rusmidler-og-avhengighet/narkotikabruk-pa-gateplan-i-syv-norske-byer-2017/

Gjersing, L. *Narkotikautløste dødsfall i Norge 2020*. [Drug-induced deaths in Norway 2020]. Folkehelseinstituttet [Norwegian Institute of Public Health]. https://www.fhi.no/nettpub/narkotikainorge/konsekvenser-av-narkotikabruk/narkotikautloste-dodsfall-2020/

Gjersing, L., & Bretteville-Jensen, A. L. (2014). Gender differences in mortality and risk factors in a 13-year cohort study of street-recruited injecting drug users. *BMC Public Health*, *14*(1), 440.

Gjersing, L., & Bretteville-Jensen, A. L. (2018). Patterns of substance use and mortality risk in a cohort of ‘hard-to-reach’ polysubstance users. *Addiction*, *113*(4), 729-739.

Gjersing, L., & Helle, M. K. (2021). Injecting Alone is More Common among Men, Frequent Injectors and Polysubstance Users in a Sample of People Who Inject Drugs. *Substance Use & Misuse* , *56:14*, 2214-2220

Gjersing, L. R., & Amundsen, E. J. *Narkotika i Norge* [Drugs in norway]. Folkehelseinstituttet [Norwegian Institute of Public Health]. https://fhi.brage.unit.no/fhi-

xmlui/bitstream/handle/11250/2582062/Narkotika%20i%20Norge%202018utgave2.pdf?sequence=6

Goffman, E. (1963). *Stigma: Notes on the management of spoiled identity*. Prentice-Hall.

Hagan, H., Campbell, J. V., Thiede, H., Strathdee, S. A., Ouellet, L., Latka, M., Hudson, S., & Garfein, R. S. (2007). Injecting alone among young adult IDUs in five US cities: evidence of low rates of injection risk behavior. *Drug and Alcohol Dependence*, *91*, S48-S55. https://doi.org/10.1016/j.drugalcdep.2007.02.002.

Helsedirektoratet. *Nasjonal overdosestrategi 2019-2022. "Javisst kan du bli rusfri - men først må du overleve". [Nationa Overdose Strategy 2019-2022. "Sure you can quit drugs—but first you have to survive"]* Helsedirektoratet [Norwegian Directorate of Health]. https://www.regjeringen.no/contentassets/405ff92c06e34a9e93e92149ad616806/20190320_nasjonal_overdosestrategi_2019-2022.pdf

Helsenorge. (25.03.2021). *Forebygging av overdoser*. https://www.helsenorge.no/rus-og-avhengighet/forebygging-av-overdose/

Keane, H. (2003). Critiques of harm reduction, morality and the promise of human rights. *International Journal of Drug Policy*, *14*(3), 227-232. https://doi.org/10.1016/S0955-3959(02)00151-2.

Kirst, M. J. (2009). Social capital and beyond: a qualitative analysis of social contextual and structural influences on drug-use related health behaviors. *Journal of Drug Issues*, *39*(3), 653-676.

Latkin, C., Srikrishnan, A. K., Yang, C., Johnson, S., Solomon, S. S., Kumar, S., Celentano, D. D., & Solomon, S. (2010). The relationship between drug use stigma and HIV injection risk behaviors among injection drug users in Chennai, India. *Drug and Alcohol Dependence*, *110*(3), 221-227. https://doi.org/10.1016/j.drugalcdep.2010.03.004.

Luoma, J. B., Twohig, M. P., Waltz, T., Hayes, S. C., Roget, N., Padilla, M., & Fisher, G. (2007). An investigation of stigma in individuals receiving treatment for substance abuse. *Addictive Behaviors*, *32*(7), 1331-1346. https://doi.org/10.1016/j.addbeh.2006.09.008

Mathers, B. M., Degenhardt, L., Bucello, C., Lemon, J., Wiessing, L., & Hickman, M. (2013). Mortality among people who inject drugs: a systematic review and meta-analysis. *Bulletin of the World Health Organization*, *91*, 102-123. https://doi.org/10.2471/BLT.12.108282.

McCrae, K., Hayashi, K., Bardwell, G., Nosova, E., Milloy, M., Wood, E., & Ti, L. (2020). The effect of injecting alone on the use of drug checking services among people who inject drugs. *International Journal of Drug Policy*, *79*, 102756. https://doi.org/10.1016/j.drugpo.2020.102756.

Moore, D. (2004). Governing street-based injecting drug users: A critique of heroin overdose prevention in Australia. *Social Science and Medicine*, *59*(7), 1547-1557.

Moore, D. (2008). Erasing pleasure from public discourse on illicit drugs: On the creation and reproduction of an absence. *International Journal of Drug Policy*, *19*(5), 353-358.

Muncan, B., Walters, S. M., Ezell, J., & Ompad, D. C. (2020). "They look at us like junkies": influences of drug use stigma on the healthcare engagement of people who inject drugs in New York City. *Harm Reduction Journal*, *17*(1), 1-9.

O'Malley, P., & Valverde, M. (2004). Pleasure, freedom and drugs: The uses of 'pleasure'in liberal governance of drug and alcohol consumption. *Sociology*, *38*(1), 25-42. https://doi.org/10.1177/0038038504039359.

Oslo University Hospital. *Evaueringsprosjekt. Herionassistert behandling [An evaluation project. Heroin-assisted treatment]*. Oslo University Hospital. https://oslo-universitetssykehus.no/fag-og-forskning/forskning/forskningsmiljoer/rusforsk/evalueringsprosjekt-heroinassistert-behandling

Papamihali, K., Yoon, M., Graham, B., Karamouzian, M., Slaunwhite, A. K., Tsang, V., Young, S., & Buxton, J. A. (2020). Convenience and comfort: reasons reported for using drugs alone among clients of harm reduction sites in British Columbia, Canada. *Harm Reduction Journal*, *17*(1), 1-11. https://doi.org/0.1186/s12954-020-00436-6.

Paquette, C. E., Syvertsen, J. L., & Pollini, R. A. (2018). Stigma at every turn: Health services experiences among people who inject drugs. *International Journal of Drug Policy*, *57*, 104-110.

Rhodes, T. (2002). The 'risk environment': a framework for understanding and reducing drug-related harm. *International Journal of Drug Policy*, *13*(2), 85-94.

Rhodes, T., Davis, M., & Judd, A. (2004). Hepatitis C and its risk management among drug injectors in London: renewing harm reduction in the context of uncertainty. *Addiction*, *99*(5), 621-633. https://doi.org/10.1111/j.1360-0443.2004.00692.x.

Rhodes, T., Stimson, G. V., & Quirk, A. (1996). Sex, drugs, intervention, and research: from the individual to the social. *Substance Use and Misuse*, *31*(3), 375-407. https://doi.org/10.3109/10826089609045817.

Rhodes, T., Watts, L., Davies, S., Martin, A., Smith, J., Clark, D., Craine, N., & Lyons, M. (2007). Risk, shame and the public injector: a qualitative study of drug injecting in South Wales. *Social Science and Medicine*, *65*(3), 572-585. https://doi.org/10.1016/J.SOCSCIMED.2007.03.033.

Rivera, A. V., DeCuir, J., Crawford, N. D., Amesty, S., & Lewis, C. F. (2014). Internalized stigma and sterile syringe use among people who inject drugs in New York City, 2010–2012. *Drug and Alcohol Dependence*, *144*, 259-264.

Simmonds, L., & Coomber, R. (2009). Injecting drug users: a stigmatised and stigmatising population. *International Journal of Drug Policy*, *20*(2), 121-130. https://doi.org/10.1016/j.drugpo.2007.09.002.

Small, W., Fast, D., Krusi, A., Wood, E., & Kerr, T. (2009). Social influences upon injection initiation among street-involved youth in Vancouver, Canada: a qualitative study. *Substance Abuse Treatment, Prevention, and Policy*, *4*(1), 8. https://doi.org/10.1186/1747-597X-4-8.

Small, W., Moore, D., Shoveller, J., Wood, E., & Kerr, T. (2012). Perceptions of risk and safety within injection settings: Injection drug users' reasons for attending a supervised injecting facility in Vancouver, Canada. *Health, Risk & Society*, *14*(4), 307-324. https://doi.org/10.1186/1747-597X-4-8.

Small, W., Rhodes, T., Wood, E., & Kerr, T. (2007). Public injection settings in Vancouver: physical environment, social context and risk. *International Journal of Drug Policy*, *18*(1), 27-36. https://doi.org/10.1016/j.drugpo.2006.11.019

Small, W., Wood, E., Tobin, D., Rikley, J., Lapushinsky, D., & Kerr, T. (2012). The injection support team: a peer-driven program to address unsafe injecting in a Canadian setting. *Substance Use and Misuse*, *47*(5), 491-501.

Strathdee, S. A., Shoptaw, S., Dyer, T. P., Quan, V. M., Aramrattana, A., & Substance Use Scientific Committee of the HIV Prevention Trials Network. (2012). Towards combination HIV prevention for injection drug users: addressing addictophobia, apathy and inattention. *Current Opinion in HIV and AIDS*, *7*(4), 320.

Tsang, V., Papamihali, K., Crabtree, A., & Buxton, J. (2019). Acceptability of technological solutions for overdose monitoring: perspectives of people who use drugs. *Substance abuse*, 1-10. https://doi.org/10.1080/08897077.2019.1680479.

UNODC. *World drug report 2021. (United Nations publication, Sales No. E.21.XI.8).* https://www.unodc.org/res/wdr2021/field/WDR21_Booklet_1.pdf

Winiker, A. K., Tobin, K. E., Gicquelais, R. E., Owczarzak, J., & Latkin, C. (2020). "When You're Getting High… You Just Don't Want to Be around Anybody." A Qualitative Exploration of Reasons for Injecting Alone: Perspectives from Young People Who Inject Drugs. *Substance Use and Misuse*, *55*(13), 2079-2086. https://doi.org/10.1080/10826084.2020.1790008.

Zajdow, G. (2010). 'It blasted me into space': Intoxication and an ethics of pleasure. *Health sociology review*, *19*(2), 218-229. https://doi.org/10.5172/hesr.2010.19.2.218.