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A qualitative study exploring the impact of the COVID-19 pandemic on People Who Inject Drugs (PWID) and drug service provision in the UK: PWID and service provider perspectives

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Abstract

Background: People Who Inject Drugs (PWID) are subject to distinct socio-structural inequalities that can expose them to high risks of COVID-19 transmission and related health and social complications. In response to COVID-19 mitigation strategies, these vulnerabilities are being experienced in the context of adapted drug treatment service provision, including reduced in-person support and increased regulatory flexibility in opioid substitution therapy (OST) guidelines. This study aimed to explore the longer-term impact of the pandemic on the health and wellbeing of PWID, including provider and client experiences of treatment changes.

Methods: Interviews were conducted with 19 PWID and 17 drug treatment providers between May – September 2021, recruited from third-sector drug services in the UK. Data were analysed using reflexive thematic analysis.

Results: Most participants expressed ongoing fears of COVID-19 transmission, although socio-structural inequalities limited the contexts in which physical distancing could be practised. In addition, virus mitigation strategies altered the risk environment for PWID, resulting in ongoing physical (e.g. drug use patterns and characteristics), economic (e.g. sex work engagement and income generation) and social (e.g. stigmatization and marginalization) harms. Finally, whilst clients reported favourable experiences from service adaptations prompted by COVID-19, there was continued scepticism and caution among providers toward sustaining any treatment changes beyond the pandemic period.

Conclusions: Whilst our findings emphasize the importance of accessible support measures attending to the immediate priorities of PWID during this period, there is a need for additional supports to ensure socio-structural vulnerabilities that disproportionality affect

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PWID are not exacerbated by the pandemic. In addition, treatment adaptations initiated in response to the pandemic require further attention to ensure they are acceptable to both clients and providers.

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Introduction

In response to the COVID-19 pandemic, governments worldwide have implemented various mitigation measures - including physical distancing, mobility constraints and the closure of business and educational settings - in efforts to suppress the virus. Whilst these measures have resulted in significant disruption to the lives of many (Brooks et al., 2020; Pierce et al., 2020), their effects vary across populations and are disproportionally impacting some of the most marginalised members of society (Bambra & Lynch, 2021; Bambra, Riordan, Ford, & Matthews, 2020). This includes People Who Inject Drugs (PWID), a population subject to pre-existing socio-structural inequalities (e.g. economic disadvantage, housing instability, stigma) that are likely to expose them to high risks of COVID-19 transmission and related health and social complications (Vasylyeva, Smyrnov, Strathdee, & Friedman, 2020).

Emerging research has documented the initial health and social impacts of the pandemic on PWID. Firstly, whilst mitigation measures have been implemented in efforts to minimise contact and transmission, they have disrupted daily routines and access to health and social care, and increased adverse mental health impacts, including isolation, boredom and anxiety (Bennett, Townsend, & Elliott, 2021; Kesten et al., 2021; Roe et al., 2021). Further, travel restrictions and border closures have resulted in unstable drug markets and variable drug supplies, with some evidence of poly-drug use and substance substitution in response to temporary shortages at local levels (Croxford et al., 2021; Morin, Acharya, Eibl, & Marsh, 2021). Finally, widespread business closures and a decline in opportunities for informal income-generating activities (e.g. begging, theft, sex work) have exacerbated material and economic hardship for PWID, increasing vulnerability to both drug (e.g. opioid withdrawal) and health (e.g. hunger) related harms (Bennett et al., 2021). A combination of these factors may be behind increased risk behaviours (e.g. syringe sharing, poly-drug use) (Nguyen & Buxton, 2021; Perri et al., 2021) and the acceleration of fatal and non-fatal opioid overdoses

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since the introduction of social distancing measures worldwide (Friedman & Akre, 2021; Glober et al., 2020; Rodda, West, & LeSaint, 2020; Slavova, Rock, Bush, Quesinberry, & Walsh, 2020).

In response to social distancing measures, many services have reconfigured treatment and support for PWID to limit daily clinical encounters and reduce chances of virus transmission. For example, greater regulatory flexibility in opioid substitution therapy (OST) guidelines, including a shift from the daily supervised consumption of agonist medications (e.g. methadone and buprenorphine) to the provision of fortnightly 'take-home doses' was introduced in the UK and US (Department of Health and Social Care, 2021; SAMHSA, 2020). Further measures - including the home delivery of harm reduction equipment (e.g. naloxone, injecting equipment), mobile outreach and expanded telephonic and telehealth services - were also established in attempts to increase treatment access in the context of reduced service availability (Aronowitz et al., 2021; Courser & Raffle, 2021; Mehtani et al., 2021; Nordeck, Buresh, Krawczyk, Fingerhood, & Agus, 2021). Given how treatment engagement and retention is often compromised by inaccessibility and – in the case of OST - the daily burden of supervised consumption (Frank, 2021; Frank et al., 2021; Hall, Le, Majmudar, & Mihalopoulos, 2021), the pandemic presents a context in which these particular issues can be addressed and improved, at least temporarily. Although service providers have reported concerns that adaptations may decrease quality of care and lead to increased instances of medication diversion and overdose (Hunter, Dopp, Ober, & Uscher-Pines, 2021), emerging evidence from survey data generally conveys favourable outcomes among clients with limited occurrences of medication diversion or misuse (Figgatt, Salazar, Day, Vincent, & Dasgupta, 2021; Joseph, Torres-Lockhart, Stein, Mund, & Nahvi, 2021). Such contradictions reflect pre-existing debates on the use of telehealth modalities in healthcare

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(Scott Kruse et al., 2018), as well as provider/client discussions regarding the optimal delivery of OST (Anthony et al., 2012; Frank, 2021).

The effects of the COVID-19 pandemic on PWID are likely to be long-lasting and are only now beginning to emerge. In this context, there remains a need for research with PWID and service providers beyond the initial stages of the pandemic, including any lasting and sustained impacts on drug-use patterns, drug-related harms and mental health previously identified (Bennett et al., 2021; Kesten et al., 2021). Of further interest is how both providers and clients are continuing to respond to COVID-initiated service adaptions, including the continuation/discontinuation of remote working practices (e.g. telehealth, reduced in-person appointments) and the relaxation of OST regulations. Whilst studies have reported early insights from clients toward some of these changes (e.g. Kesten et al., 2021), the perspectives and reactions of providers to altered treatment delivery are mainly absent, particularly in the UK. Understanding how service providers responded to the pandemic - including their comfort and willingness to use new forms of service delivery - can provide important practice and policy insights for whether seemingly temporary service responses to COVID-19 persist beyond this period.

Therefore, the current study investigates the longer-term impacts of the pandemic on the health and wellbeing (including drug-related harms and risk behaviours) and everyday lives of PWID, as well as their experiences of treatment changes from the perspectives of both PWID and service providers.

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Methods

The research employed a qualitative design using semi-structured interviews with PWID and voluntary drug service providers. The study formed part of the UCL COVID-19 Social Study (UCL, 2021), which explores the psychosocial effects of COVID-19 and associated restrictions on people living in the UK. Participants were interviewed between May – September 2021 about their experiences throughout the pandemic, including any implications for substance use, treatment engagement and delivery, and mental health and wellbeing. Ethical approval was provided by University College London research ethics committee [Project ID 6357/002].

Sample and recruitment

Participant recruitment was conducted via social media and the UCL COVID-19 Social Study (including its newsletter and website; for full details on the recruitment strategies and sample of the COVID-19 Social Study, see the User Guide https://osf.io/jm8ra/). Voluntary drug treatment services located in England and Scotland also advertised the research via bespoke posters and fliers within service settings. Clients were eligible to participate if they were (i) a current injecting opioid user or had been injecting opioids at some stage during the pandemic, (ii) aged over 18, and (iii) living in the UK. Service providers could participate if they (i) worked directly with PWID, (ii) were aged over 18, and (iii) living in the UK. Both groups were purposively recruited to ensure diversity of gender, age, ethnicity and occupation in the case of service providers.

Eligible participants were provided with details verbally and in writing about the purpose of the research and informed that their involvement was voluntary. All participants signed a consent form, and demographic details (e.g. age, gender, ethnicity) were obtained.

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Data Collection

Interviews were conducted by TM (research fellow in social science), and JD (physiotherapist and research fellow in health inequalities) via telephone/video call (n=21) or in-person (n=15). All interviews were conducted individually apart from one interview, which was conducted with two PWID who requested to be interviewed together. Interviews followed a semi-structured topic guide, which enabled data collection on the impact of the pandemic on substance use, treatment engagement and delivery and mental health and wellbeing (see appendix 1 for full topic guide). Interviews lasted an average of 38 minutes, were digitally recorded and transcribed verbatim by a professional transcription service. All interviews with service providers were conducted remotely (n=17) while the majority of client interviews were conducted face-to-face within a drug service or hostel facility (n=15). These interviews took place in a ventilated room and the researcher followed social distancing guidelines. Monetary compensation in the form of a £10 high street or supermarket voucher was offered to thank participants for their involvement. Data collection continued until theoretical saturation occurred (i.e. the point at which data emerged consistently or where no further data would develop new properties, categories or findings).

Data analysis

Transcripts were uploaded to NVivo version 12 software after de-identification. We used reflexive thematic analysis (Braun & Clarke, 2019, 2021) to analyse the data, which involved three transcripts being initially read independently and coded by two members of the research team (TM and JD), who then discussed any codes or emerging themes of potential significance to the research objectives. A preliminary coding framework - informed deductively by concepts within the topic guide - was used during this process, although an inductive approach was also applied to refine the framework as concepts within the data were

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identified. This framework was then applied to the remaining transcripts by TM, who re-read transcripts, coded and synthesised text into categories, which were subsequently grouped into themes. The research team met weekly to discuss and iteratively refine any new codes or themes that emerged. This ensured that the final extracted themes were not just the personal interpretation of one team member.

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Results

Participant characteristics

We interviewed 36 participants (19 clients and 17 service providers). All client participants were recruited through voluntary sector drug services; four were recruited through a service based in London and 15 through a service in Bristol. The average age of clients was 40 (range 24-59), with just over half identifying as female (n= 10). Most clients were White British (n=13) and at the time of interview most were temporarily housed, either in a hostel or with friends/family. Clients reported current or recent use of heroin or heroin and crack cocaine. Poly-substance use was also common at the time of interview, including instances of alcohol, benzodiazepine and pregabalin use. Table 1 provides an overview of client characteristics.

Table 1. Characteristics of PWID

Demographics	Range/n (mean)
Age	24-59 years (40.1 years)
Gender	
Female	10
Male	9
Ethnicity	
White British	13
Black or Black British Caribbean	2
White and Black Caribbean	2
White Other	2
Housing Situation	
Hostel	8
Rented (council)	6
Rented (private)	2
Temporary with friend/family	2
Street Homeless	1
Substance Use*	
Heroin and crack cocaine	18
Diazepam	4
Alcohol	4
Pregabalin	4
Spice	2
Heroin	1

***Refers to use of all reported substances**

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Seventeen interviews were conducted with service providers from a single third-sector drug treatment provider with services located across England and Scotland. Service providers were from various occupational backgrounds within the drug and alcohol field, including clinical, management and frontline staff. The average age of service providers was 45 (range 28-67), with just over half identifying as male (n=9). The majority were White British (n=13). Table 2 provides an overview of service provider characteristics.

Table 2. Characteristics of service providers

Demographics	Range/n (mean)
Age	28-67 years (45.5)
Gender	
Male	9
Female	8
Ethnicity	
White British	13
Black or Black British African	2
White Other	2
Occupation	
Drug Service Team Leader/Services Manager	7
Drug Service Worker (Recovery Coordinator)	5
GP with Addiction Specialism	2
Substance Use Nurse	2
Consultant Psychiatrist	1
Location	
London and South East	6
North West	4
East Midlands	2
Yorkshire and Humber	2
Scotland	1
South West	1
West Midlands	1
Years of experience	
1-5 years	2
6-10 years	8
10 years +	7

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Three primary themes were identified: (1) ongoing fears of COVID-19 infection but limited possibilities for guideline adherence, (2) increased social and drug-related harms, and (3) experiences of service adaptations. Themes are shown in Figure 1, along with their respective subthemes.

(1)	**Ongoing fears of COVID-19 infection but limited possibilities for guideline adherence**
(2)	**Increased social and drug-related harms**
	Changes in drug use patterns and behaviours
	Increased barriers to and risks in generating income
	Increased public hostility and stigma
(3)	**Experiences of service adaptations**
	Opioid Substitution Therapy (OST) changes
	Remote service provision

Figure 1. Key themes

1. Ongoing fears of COVID-19 infection but limited possibilities for guideline adherence

Most clients reported how they were fearful of contracting COVID-19, especially during the earlier months of the pandemic. This was often due to the presence of pre-existing health conditions that increased their vulnerability (*but because I've got COPD…if I get it, I could die, and I'd be really ill because my chest can't fight off infection. So…I've been cautious in that way*, client 1, F(emale), (aged) 46-50). Most service providers described how clients were therefore careful to protect themselves and complied with virus mitigation strategies:

> *Their health and anxieties were so high to start with, they're really good at uptake of vaccines, wearing face masks, because their health and anxieties are massive, and they have co-existing health problems, I would say they've been really cautious* (recovery coordinator, F, 51-55)

Despite ongoing fears, most clients described how their adherence to social distancing had declined since the start of the pandemic (*like at first most people did take it seriously, [but]*

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on the second one [lockdown], the drinkers around my way didn't take it seriously, client 2, F, 46-50). Whilst a small number did report feeling less worried due to previous possible infection (*I reckon us streeties have probably had it and had it mutate in us so many times*, client 2, F, 56-60) or not knowing anyone who had contracted the virus (*I'm not really that fussed. I haven't seen anyone with it, I don't know anyone who's had it*, client 6, M(ale), 31-35), the majority of participants attributed declines in adherence to lifestyles and routines that were unconducive to sustained periods of social distancing. This included how more immediate everyday concerns – including avoiding withdrawal and income generation – often took priority over compliance with public health measures. Those involved in street-based sex work, for example, reported ceasing activity at first but later returning, despite concerns about contracting COVID-19 (*I did feel scared. I stopped sex working in the first wave… I got really scared that I was actually going to die, because I knew I probably would if I got it,* client 3, F, 26-30). Although worried, this client saw continued engagement in sex work as the 'only option' in the absence of sufficient social and economic support:

> *Yes, it put not just me but a lot in dire straits really. Because the thing is our income was cut literally overnight. There was no warning. And then there was no furlough scheme for sex workers, do you know what I mean. Benefits went up £20 a week. But what did that do, nothing. It wasn't a dent*
> (client 3, F, 26-30)

COVID-19 fears were also described within the context of accommodation settings. At the time of interview most clients were housed temporarily in hostels (see Table 1). Both clients and providers noted how, despite COVID-19 measures being in place, adherence was often variable (*When you walked in, they would be like, "Hand sanitiser when you come in. Mask, fresh mask when you come in," but no one would really stick to it,* client 5, M, 26-30). One provider felt these behaviours were most pronounced among younger clients with more entrenched drug using lifestyles:

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> *the people I was more worried about were actually younger ones who were more chaotic, who don't think about it and they use together, sharing crack pipes, being in hostels where they're all just intermingling. Actually you think the elder population, they basically kept themselves to themselves* (team leader, F, 26-30)

Older clients and those with pre-existing health conditions therefore reported still feeling vulnerable to infection within accommodation settings, particularly as communal spaces were often 'overcrowded' and 'cramped'. These environments were not conducive to social distancing and elevated fears of transmission:

> *Like we're in a small block of flats but we know there is no way that if the disease got in the block that it wouldn't get caught by us. It's got communal lifts, communal stairways, communal washing machines, you know, so we just prayed to God that it didn't get everywhere* (client 4, M, 46-50)

2. Increased social and drug-related harms

Alongside fears of contracting COVID-19, clients and service providers reported how public health measures (including social distancing, the closure of businesses and mobility constraints) had exacerbated several indices of drug-related harms among PWID. This included immediate and ongoing impacts on drug use patterns and behaviours, barriers to and risks in generating income, and heightened feelings of stigma and discrimination.

Changes in drug use patterns and behaviours

Both providers and clients reported difficulties with clients sourcing heroin during the initial pandemic period. Whilst some described obstacles to conducting drug transactions in public spaces (*It's just harder work because you just have to go to places where they were more hid away,* client 3, M, 31-35), others noted local drug supply shortages (*supply at the beginning of lockdown…was really difficult. A lot of dealers just didn't have anything,* client 3, F, 21-

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25) and increased adulteration (*it was just bashed to death do you know what I mean? And you have to buy loads of it to even get a little feeling,* client 7, F, 41-45). Although some responded to these constraints by either ceasing or reducing their heroin use (*I'm not doing that recently because of how crap it is, how small it is…there's just no point,* client 8, M, 46-50), some reported stockpiling excess doses of OST medications to use as an emergency 'backup', or sourcing other substances in attempts to either alleviate withdrawal symptoms or mimic the effects of heroin:

> *Well, I started buying Fentanyl patches online. And then I started buying pregabs. But the pregabs turned out to be fake, so I stopped taking them. But then the Fentanyl patches were real. So, I started taking them, just to keep me going so I wasn't withdrawing. Or I used to buy Dihydrocodeine off people, and DMs [dextromethorphan], and just absolutely munch them, or morphine. I'd try and source morphine…or someone else's methadone* (client 3, F, 21-25)

Although the use of other substances – including benzodiazepines, pregabalin, methadone and alcohol - provided a welcome respite from the physical symptoms of withdrawal and the constant psychological worry that they might become 'sick', both clients and providers noted the consequences. Whilst no reports of overdose were reported among clients, providers linked anecdotal reports of increased accessibility to and use of illicit benzodiazepines to drug-related deaths during this period:

> *There's a huge street Benzo problem in [location], and it's one of the major factors driving the drugs deaths rate. They're very easily available and very cheap* (recovery coordinator, F, 51-55).

Some clients described blackouts, memory loss or tolerance issues due to using unfamiliar substances. Increased fear and heightened anxiety around the consequences of poly-drug use were often widespread in client narratives:

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> *the benzos and taking like the prescription drugs, that's been a problem because of the blackout, it terrifies me to be honest…I don't remember things being quite as bad as that when I was injecting gear, and like I have had black outs, OD'd a few times, but like not accounting for hours of time, waking up in different places, being told about how I am acting, it's really cringe worthy you know? I would feel huge anxiety and I have got into a bit of a problem* (client 9, F, 41-45)

Participants indicated that drug market volatility had ended by the time of interview (May – September 2021). Some clients, recognising the harms associated with poly-drug use, had therefore returned to the exclusive use of heroin:

> *I was then drinking, doing benzos…and [keyworker] was like, 'Jesus Christ, you've got to stop something, otherwise you'll end up overdosing by accident'. So, I did. I stopped the alcohol and benzos, because they weren't really my primary substances I used to use* (client 3, F, 21-25).

Others however reported how changes in drug-use patterns initiated during the earlier stages of the pandemic were sustained beyond this period. Some described a reduction in heroin use but ongoing issues with benzodiazepines and pregabalins that proved challenging to stop:

> *At the moment I'm trying to stay away from it [heroin]. But to be honest we've been using Pregabs…they're hard to come off… I've been taking a whole strip every day for a while, I can get them every day* (client 8, M, 46-50)

Additionally, some clients who would normally only use heroin noted how they had developed continuing patterns of crack cocaine use since the onset of the pandemic. Whilst providers suggested that increased availability and recent fluctuations in local supply may have facilitated this trend (*Within the last two months I've noticed more and more people coming to me with crack-cocaine problems. So there's been a flood of that, I'm not sure what's behind that, but there has been a flood of crack in [location] specifically*, recovery

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coordinator, F, 51-55), clients also explained how the short-term and intense effects of crack cocaine encouraged the compulsive use of the substance. Some client narratives suggested a development of rapid increases in tolerance and the need to use much more frequently during this period:

> *[When] you have a bit of crack, it feels quite good at first but it never keeps its promises up. And the crapper the crack is the quicker it goes – like you can do a pipe and literally be doing one straight after* (client 11, M, 36-40)

Increased barriers to and risks in generating income

Clients reported how the initial pandemic period limited opportunities for involvement in informal income-generating activities relied upon to meet basic subsistence needs, such as food, housing and drug acquisition. Shop closures, heightened security, and increased visibility deterred some from attempting to enter stores they had previously shoplifted from through fear of detection:

> *A lot of the shops were shut so it was only like the main ones like Tesco or Sainsbury…and we can't go near none of them and all town was shut off, and they had like security guards and dogs and stuff, you couldn't even walk through there. It just absolutely destroyed any shoplifting* (client 12, M, 36-40)

Those involved in street sex work reported how reductions in revenue during the pandemic - either due to the inability to operate during times when stay-at-home orders were in place, or a decline in customers - severely limited their ability for daily survival, including the acquisition of drugs and other daily needs *(we've got some girls who are sex working, that obviously all stopped, so then when income goes, supply goes,* team leader, F, 26-30). For those who continued to sex work, a further concern was the need to remain 'hidden' in response to earlier virus mitigation measures (e.g. stay-at-home orders) and increased law

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enforcement. This often had the consequence of displacing sex work to less visible settings (e.g. customer's homes) where risks of harm or violence were elevated:

> *you don't want to get seen, especially if you were working the street, you'd work in a way that you didn't see the police. So, you're working more dangerous areas. And because there were less people, less clients, because obviously the fucking pandemic, they were scared of us as well…Or they'd do things like, oh, yes, come round my house so you won't get seen. But it's really dangerous to be round someone else's house. They can do all sorts to you* (client 3, F, 26-30)

Some reported a reduced demand for street-based sex work once social distancing restrictions were eased, which was linked to customer health concerns and an accelerated shift toward online sexual services

> *It just was dwindling…there were girls out there doing it for £10…but they were getting so desperate out there, and a lot of people [clients] have gone on the internet now anyway* (client 7, F, 41-45).

In response, those continuing with or returning to street-based sex work described having to lower prices (*you were having punters wanting to give you £10 and all that shit,* client 2, F, 56-60) or taking greater risks due to their increased economic vulnerability. Some reported how they were now at heightened risk of violence and exploitation:

> *They would ask for more, and they'd demand more, or they'd push the boundaries more, because they could, because they knew you needed the money. And no one else was there, so they'd demand things that you didn't want to do, or try and force you to do it anyway* (client 3, F, 26-30)

Increased public hostility and stigma

Clients reported ongoing increased perceived public hostility towards them during the pandemic. Among PWID who were street homeless or reliant on begging, this was linked to

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public perceptions of being contagious or 'unclean':

> *I find people's behaviour towards homeless people has been a little bit harsher than it has been beforehand. Their behaviour and actions towards you is like you're homeless, you must be slightly dirty, or you must be contagious* (client 13, F, 31-35)

These attitudes often manifested themselves in public incidents. This ranged from relatively innocuous displays linked to public avoidance (*I was sat there begging one day and people, they put the money a little bit over there – just a little bit over there, not in my hand,* client 14, F, 41-45), to more overt and hostile occurrences. For example, those who continued to engage in street-based sex work described increased public harassment if they were observed breaching stay-at-home orders:

> *Yes, before the pandemic as well, and during the pandemic. People just treated you like shit, especially during the pandemic. They just treated you like some sort of vector of disease. People were filming us, and putting us online, harassing us, violence went up. Yes, it was awful. It made things worse. And people were literally, they'd go round and film us and put those on Crimewatch pages, because we were breaking the law* (client 3, F, 21-25)

3. Experiences of Adaptations to Services

Clients and providers described their experiences of service adaptations initiated in response to the pandemic. Whilst a range of alterations were reported (e.g. home delivery of harm reduction and injecting equipment, implementation of a national 'Everyone in' scheme to temporarily house people who were street homeless), some of the most significant changes related to the relaxation of OST regulations and widespread shift toward forms of remote

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provision, including the use of telephone or video calls for psychosocial services and assessments.

Greater Flexibility in Opioid Substitution Therapy (OST) Changes

At the beginning of the pandemic, most services responded to social distancing restrictions by transitioning clients from the daily pick up of OST mediations to either weekly or fortnightly collection. Most providers reported initial unease and raised concerns about potential misuse and diversion, as well as the loss of benefits linked to the 'structure' of supervised consumption, including peer support and regular activity. Whilst reports of serious harm were limited, some instances of misuse were described, including "lost" bottles (*we had a few saying, "Oh I dropped the bottle"*, team leader, F, 51-55) and increased local diversion (*I've seen semi-recently in the last year…clients being able to buy illicit Methadone. So, that's come from there being an excess on the streets*, substance misuse nurse, M, 31-35). However, most providers reported favourable outcomes for participants, including increased daily freedom and autonomy:

> *there are service users out there now who pick up their methadone once a week and the other six and a half days they can just lead their lives and do whatever they're doing and that's hugely positive to them* (recovery coordinator, M, 31-35)

These observations were reflected in client accounts. Most reported how previous daily supervised consumption was onerous and disruptive to their daily lives such as managing day-to-day responsibilities, employment or childcare:

> *Because the chemist will open at nine o'clock. I wake up about half eight and I'd have to sit there. I couldn't do nothing. I couldn't even have a coffee, no food, nothing. I just have to wait till the chemist [opens]. Get to the chemist, sometimes be sick because I'm rushing, stuff like that* (client 5, M, 26-30).

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Clients noted how the change to fortnightly pick-ups also eliminated negative experiences associated with dispensing environments, including shame (*it's a bit embarrassing having to check your mouth and that, do you know what I mean? One because I've got bad teeth and two I'm nearly 50* client 4, M, 46-50) and possible theft of medication (*I used to be in that chemist there, and it's terrible there, and there used to be a gang of them outside either trying to get meds off you or they want to swap for you,* client 4, M, 46-50). Others favoured the more considered and patient-centred approach to treatment, including the increased autonomy they had over dosage and titration. For instance, some reported splitting their methadone doses over the course of day, which enabled them to manage their drug use more efficiently:

> *Yeah, because then I could limit what I could have. For instance, I was having an 8ml in the morning and then a 2ml five hours later, and then maybe another 2ml, and then another 2ml before I went to bed* (client 5, M, 26-30)

As social distancing measures relaxed, most services reverted back to previous OST protocols, including daily supervised pick-ups. The experience therefore offered an opportunity for services and clients to reflect on the future delivery of OST. As the findings above attest, for most clients the pandemic highlighted the inflexibility associated with daily supervised consumption. Some clients who transitioned back to pre-COVID regimens after receiving weekly or fortnight pick-up therefore voiced frustration at doing so. For some, it was a nuisance that jeopardised their engagement with treatment:

> *Yes, because I can manage my meds myself. Like some days I don't go down there because I can't be bothered to go down there, or I can't be bothered to queue up, you know…It's queueing up and it's all long, long, long, do you know what I mean? Sometimes I just can't be bothered, can't face it* (client 4, M, 46-50)

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Despite initial concerns, some providers became more comfortable with flexible dosing and agreed that discussions regarding future OST changes were warranted, given how only limited incidents of harm were reported. Most also indicated that clients generally found changes to OST beneficial, which altered how they felt about the continuation of treatment adaptations post-pandemic:

> *I think it was a bit of a wake-up call for us as a treatment service, that we were maybe putting restrictions on individuals that didn't need to be. We weren't trusting of those individuals* (head of programmes, M, 31-35).

Nevertheless, many providers still reported concerns surrounding quality of care and client risk and were hesitant to advocate long-term changes. Some also felt that the conditions of the pandemic allowed for more favourable OST outcomes to be achieved and that diversion and misuse would return once social distancing measures had been fully relaxed:

> *I think we need to take those changes in the context of the pandemic when people were mingling a lot less and people were probably keeping themselves to themselves a lot more. So, you know if you went back to pre-pandemic levels of mingling and kind of social interaction and people were having 14 days' worth of take home methadone, Buprenorphine etc, my feeling is that there would be a lot more diversion in that context* (consultant psychiatrist, M, 36-40)

Remote service provision

Services also responded to earlier social distancing measures by transitioning to forms of remote provision, including the use of telephone or video calls for psychosocial services and assessments. At the time of interview, most services had resumed some in-person operations, although this was largely under a 'hybrid' model whereby telephone/video provision remained in place. Some providers also continued homeworking during this period.

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Both clients and providers welcomed these operational changes and noted a number of reasons for why they should be continued. Providers felt that remote working minimised transmission risks for themselves and clients and improved their productivity. Some clients also enjoyed the increased accessibility remote service provision enabled. Indeed, some providers described apprehension among clients about returning to face-to-face sessions following periods of enforced isolation:

> *Many of our clients obviously have social anxiety anyway…but after we've been telling people, "You've got to stay in for a year", and then we tell them, "No you've got to come out", the social anxiety's escalated* (recovery coordinator, F, 51-55).

The continuation of remote group sessions was therefore particularly appreciated by those with mental health issues who found in-person meetings challenging:

> *And it's just amazing like, there's so much available. So I can do one any time of any day and it's really accessible and with having schizophrenia you know, and anxiety disorder, sometimes it's quite difficult for me to make it to the physical meetings in central* (client 10, M, 41-45)

Challenges and issues requiring attention, were, however, reported. Most clients described connectivity issues, citing a lack of phone or internet as significant barriers to engagement

> *But a lot of people don't have that access, Your normal heroin user who injects fucking five bags of heroin a day and 10 pieces of crack a day, he's not going to have an iPad where he can go on a Zoom meeting* (client 10, M, 41-45).

Despite the handout of mobile phones to address this issue, providers reported limitations for treatment quality. Often this was related to an inability to adequately assess the physical health of clients via other sensory cues, which providers felt made it easier for clients to provide false or misleading information regarding their substance use:

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> *We're doing that over the phone and it's a lot harder to assess people over the phone. A lot harder. Obviously they will tell us what they want to tell us, which is easier over the phone. What I've noticed, once I was able to see people face-to-face, the presented in person was very different from the way they presented over the phone., "Oh yes, I'm not too bad", and they come into the office and they're actually yellow* (Recovery Coordinator, F, 51-55)

Some clients confirmed that they may be less open during online consultations compared with face-to-face contact (*I just find that I pretend so much, or perhaps lie or I'm not honest you know, when people say, "How are you doing?" "Oh fine*.", client 9, F, 41-45). Others lamented the suspension of in-person services that provided a sense of routine, structure and companionship. For example, one client described how the connections and camaraderie she shared with peers in previous face-to-face group sessions were not achievable through remote online group sessions:

> *I used to go to the sex work drop-in and see other sex workers. And I loved it. We used to sit and chat and slag off clients, blow up condoms, have a vent. Slag off our mutual clients, and moan about our job. And see support services, grab condoms, something to eat, have a natter….because when you're at the drop-in, it's easier, we can talk. But I can't ring up my mate and be like just started chatting about. I don't know who she's with. I don't know if she's able to talk about it. She might be with her partner who doesn't know. So, that made it impossible. And it's made it a really lonely experience* (client 3, F, 21-25)

The different preferences for and against remote service provision and ability to access services remotely among clients created a challenge for service providers about how best to engage their clients in the current context and beyond. Indeed, one provider suggested there was a need for services to do more work in understanding the experiences of their staff and clients during the pandemic to inform future service provision:

> *As a service, we can see people, do phone calls, we can do Zoom, but there's no strategy in terms of, what is the evidence saying? What works?*

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> *How are we going to reengage with our service users?...I think we need to probably get some evidence about how it has actually affected staff. How it has affected our ability to deliver services* (head of programmes, M, 31-35).

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Discussion

Our findings are valuable, as to date, little is known about the ongoing impact of the pandemic on the health, wellbeing and daily lives of PWID. Furthermore, the experiences of service providers responding to the challenges faced by PWID are largely absent, particularly in the UK where – to our knowledge – qualitative research has focused exclusively on the perspectives of clients (Kesten et al., 2021). Therefore, this study provides new insights into the social and psychological impact of the COVID-19 pandemic on PWID and their experiences of service adaptations in this context.

Our findings suggest PWID remain fearful of COVID-19 due to the presence of pre-existing health conditions, yet broader socio-structural inequalities, including accommodation conditions and economic hardship, are limiting the ability to comply with public health measures. This confirms earlier quantitative findings that socioeconomically vulnerable populations and PWID currently using drugs have fewer possibilities to adhere to guidelines (Beale et al., 2021; Genberg et al., 2021). Our data adds qualitative insights into what these limited possibilities may be and how they are continuing to affect this population. For instance, the risk of financial and material hardship and the daily burden of 'keeping well' compelled some to disregard social distancing despite the acute risk of COVID-19 transmission, as evidenced by a continued engagement in street-based sex work among some clients. As reported elsewhere (e.g. Kesten et al., 2021), accommodation settings and living arrangements were also unconducive to social distancing, which we also found elevated distress by limiting the contexts in which physical distancing could be practised.

Feelings of vulnerability to infection have led to poorer mental health among other population groups: those with long-term health conditions, for example, reported fear and anxiety related to the consequences of COVID-19 infection (Fisher, Roberts, McKinlay,

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Fancourt, & Burton, 2021). Our findings suggest a similar, ongoing occurrence among PWID. Any additional burden on mental health among this population is particularly concerning given PWID already experience a high prevalence of mental health symptoms and barriers to accessing mental health services (Genberg et al., 2019; Priester et al., 2016) as well as it being a risk factor for ongoing substance use (Pilowsky, Wu, Burchett, Blazer, & Ling, 2011). Hence, whilst these findings highlight the importance of accessible mental health support in pandemic response measures - including access to low-threshold, co-located psychological services - there is a need for additional support attending to the social-structural vulnerabilities that shape COVID-19 related harms, including appropriate housing, shelter, food and economic support.

Our findings provide further evidence of how COVID-19 has altered a number of indices of drug-related harm among PWID, including physical (e.g. changes in drug use patterns and characteristics), economic (e.g. riskier sex work engagement and income generation) and social (e.g. increased feelings of stigmatization and marginalization of PWID) harms. Volatility in the global heroin supply and reduced availability and quality of substances at local level have been observed during the pandemic (Bennett et al., 2021). Difficulties in sourcing drugs is particularly problematic as there is evidence that PWID may substitute or transition to more readily available but unfamiliar substances in attempts to abate withdrawal symptoms (Day et al., 2003; Harris, Forseth, & Rhodes, 2015; May, Holloway, Buhociu, & Hills, 2020). Our findings, along with earlier data from the pandemic (Croxford et al., 2021; Kesten et al., 2021; Morin et al., 2021), suggest that similar patterns may have occurred due to accessibility issues. However, our data adds further insight in that some changes to drug use appeared to be temporary, with clients reverting to the sole use of heroin as availability returned. In contrast, there was some evidence to suggest the development of increased tolerance and dependence on substances initiated in response to shortages during the earlier

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stages of the pandemic, including crack cocaine, benzodiazepines and pregabalin. Although we did not identify any occurrences of significant harm, the observed shifts to increased depressant polydrug use is a concern given the potential for harm (including increased vulnerability to overdose, BBV infection (Harris et al., 2015; Horyniak et al., 2015)), particularly if used alongside opioids (Macleod et al., 2019; McAuley, Matheson, & Robertson, 2022). Switches to crack cocaine use during this period are also problematic given users' proclivity to share pipes, increasing COVID-19 transmission risks (Harris, 2020). In this context, increased take-home naloxone distribution, removing barriers to treatment, public health messaging, and access to blood-borne virus testing are essential to minimize various drug-related harms associated with limited availability, including withdrawal. The changes to crack-cocaine reported by participants in our study and the increasing availability and prevalence of its use during the pandemic more broadly (EMCDDA., 2021) also necessitate harm reduction measures to help reduce COVID-19 infection and respiratory-based health harms among this population of users (Harris, 2020)

Opportunities for informal and illegal income generation - including shoplifting, street begging and street-based sex work - were also reportedly reduced by the pandemic and found to impact the wellbeing of PWID. Interview narratives suggested those most impacted were clients reliant on survival sex work due to their increased economic precarity during this period and limited access to social protection (Platt et al., 2020). These hazards played out alongside multiple other risks (including increased visibility, fear of apprehension) and often resulted in the displacement of sex work to isolated or secluded environments (see also Elmes et al., 2021; Ogden et al., 2021; Shannon et al., 2008). There is extensive previous research drawing attention to how the criminalisation of sex work (including concerns about police presence) renders PWID vulnerable to similar harms, particularly when drug use is part of this dynamic (Lavalley et al., 2021; Ogden et al., 2021; Shannon et al., 2008). Our findings

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suggest the pandemic has similarly compounded many of these issues and heightened the possibility of harms occurring in this context. We also add new insights suggesting that a reduced demand for street-based sex work and increased competition from online sexual services in the immediate period following the relaxation of social distancing measures have severely limited some sex-workers agency over transactions, including capacity for safer sex practices, client screening and price negotiation. Hence, there is an urgent need for financial support and protection for those with no option but to continue sex working during this period (Platt et al., 2020).

Relatedly, there were indications of ongoing public hostility towards PWID who were homeless or engaging in sex work, corroborating earlier findings on the issue (Kesten et al., 2021). This was often linked to sentiments of being infected or 'unclean' (rather than actual infection), as has been reported by other population groups during the pandemic, including healthcare workers (Bagcchi, 2020). It is also possible that increased public visibility during the pandemic, including whilst begging or engaging in sex work, also increased public hostility (Grebely, Cerdá, & Rhodes, 2020). PWID are already a highly stigmatised group, the effects of which have been shown to affect feelings of self-worth, operate as a barrier to healthcare engagement (Chan Carusone et al., 2019; Lloyd, 2013) and increase symptoms of mental ill-health (Treloar, Stardust, Cama, & Kim, 2021). Although difficult to address, community and peer-led advocacy groups have been instrumental in forming and empowering collective identities among both PWID (Jozaghi, 2014) and sex workers (Benoit et al., 2017), thereby increasing self-esteem, ameliorating internalised stigma and increasing agency (Treloar et al., 2021). Such interventions are critical in the absence of formal support or protection for these groups, particularly during the pandemic.

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COVID-19 has created a context in which innovative service responses and regulatory changes can be implemented and examined, thereby providing preliminary insight into the feasibility of future service adaptations. A shift to weekly or fortnightly OST pickups during the earlier stages of the pandemic were well received and afforded a number of benefits to clients, including stigma reduction, increased day-to-day freedom, and greater control over daily dosage, as reported elsewhere (Krawczyk, Fawole, Yang, & Tofighi, 2021; Nordeck et al., 2021). Building on these earlier findings, our data provides insights into how clients and providers perceived changes back to daily supervised consumption following a relaxation in social distancing rules. Most clients expressed displeasure at this reversal given the aforementioned benefits and a perception that they had 'proved' themselves capable of managing take-home doses. This is largely in contrast to a continued scepticism and caution among providers toward any sustained relaxation of regulations, as similarly reported elsewhere (Hunter et al., 2021; Krawczyk et al., 2021). Whilst these contradictions reflect long-standing debate between client/provider preferences regarding the optimal delivery of OST (Frank, 2021), services may wish to take stock of the benefits afforded from these changes during this period (e.g. Figgatt et al., 2021; Frank et al., 2021; Kesten et al., 2021). This is especially important given the daily burden of supervised consumption was often cited as one reason behind low retention rates in OST prior to the pandemic (Frank, 2021; Nolan et al., 2015). Further research is required to enable best practice in balancing the potential risks and benefits of relaxed regulations, including objective patient outcome data to determine whether flexibilities have improved or worsened treatment outcomes, medication diversion and overdose.

Whilst remote service provision, including the use of telephonic methods, were implemented rapidly to increase service access, most services reported retaining some elements of remote operating at the time of data collection and envisioned their continued use in the future.

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Although providers and some clients reported benefits of virtual forms of treatment, including increased access and the ability to reach clients unwilling to engage with face-to-face psychosocial services, our findings also highlighted several disruptions to care due to the ongoing use of such methods. These were mostly related to difficulties assessing client health and wellbeing virtually and perceived reductions in levels of support provided. This is in line with earlier research reporting a lack of provider comfort and willingness in using such methods (Aronowitz et al., 2021; Goldsamt, Rosenblum, Appel, Paris, & Nazia, 2021), and disrupted support routines among clients (Kesten et al., 2021). PWID also face disparities in accessing telehealth services, and although innovations – including onsite, private rooms with sanitized telephones (Quiñones et al., 2021) and the distribution of donated mobile phones (Komaromy et al., 2021) – have proved successful in offsetting some of these issues, there remains a need to ensure access to telehealth services is more evenly distributed among PWID. Similarly, providers must be equipped and comfortable with using telehealth methods as their use becomes increasingly integrated in treatment frameworks and routine health care (Aronowitz et al., 2021). The development of an improved telehealth infrastructure, including dedicated and tailored telehealth training curricula for health and social care workers, has been recommended (Fisk, Livingstone, & Pit, 2020; Thomas et al., 2020), and may have similar utility for those working in drug services. Our findings also suggest the need for further research into the effectiveness of remote service provision on client engagement and treatment outcomes.

Limitations

This study is not without limitations. First, the sampling strategy may be biased toward those participants willing or able to participate. It is possible the views expressed in this study differ from those unwilling or unable to participate and may contribute to the under-reporting of certain experiences (e.g. overdose). Second, client and provider interviews were conducted

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over several months and may therefore reflect the impact of time-specific events or experiences, including lockdown measures or service alterations. For example, interviews were conducted at a time when COVID-19 legal restrictions were lifted in UK, including the removal of social distancing and social contact limits and the reopening of businesses (UK Parliament, 2021). The timing of interviews therefore require consideration when interpreting the findings. Nevertheless, participants were able to recount both current and retrospective experiences during periods when more restrictive social distancing measures were in place (e.g. stay at home orders). Finally, whilst the study includes the experiences of providers and clients from various regions of England and Scotland, regional differences in service provision, drug markets and lockdown measures may mean perspectives and experiences vary in ways that are not fully captured in this research.

Despite these limitations, the paper is the first known study in the UK to interview both drug service providers and PWID about their ongoing experiences of the COVID-19 pandemic. Understanding the experiences of the latter is particularly important given their increased marginalisation and vulnerability during this period. Thus, the study provides a voice to a seldom heard group through in-depth, semi-structured interviews, which can provide important insights for future policy directions and service provision.

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Conclusion

This paper provides new insights into the ongoing impact of the pandemic on the mental health, drug-related harms and behaviours of PWID as well as adaptations to treatments and services. Whilst our findings emphasize the importance of accessible support measures attending to the immediate priorities of PWID during this period (including access to low-threshold, co-located psychological services, naloxone, NSP provision, low-threshold OST programmes) there is a need for additional support addressing the social-structural vulnerabilities that disproportionality affect PWID. This includes the provision of appropriate housing, shelter, food and economic support to ensure pre-existing disparities and harms are not exacerbated further by the conditions of the pandemic. Drug service adaptations initiated in response to the pandemic also require further attention to ensure future treatment is acceptable and ultimately responsive to the needs of PWID. In this context, it is important that any innovations in treatment are informed by the knowledge and expertise of PWID themselves, given the benefits afforded by some service adaptations (e.g. relaxation of OST). However, service deliverers may require further support (e.g. tailored training curricula) to increase acceptance of any sustained policy and service delivery adaptations prompted by COVID-19.

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Data Availability

The datasets presented in this article are not readily available because they contain information that could compromise the privacy of research participants. Requests to access the datasets should be directed to d.fancourt@ucl.ac.uk.

Author Contributions

AB and DF contributed to the conception and design of the study. TM was responsible for data collection and wrote the first draft of the manuscript. TM and JD performed the formal data analysis. AB, DF, and JD assisted with review and editing. All authors contributed to manuscript revision, read, and approved the submitted version.

Ethics approval

The study was reviewed and approved by the University College London Ethics Committee (Project ID 6357/002)

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