


BMJ Open Exploratory qualitative study examining acceptability of strategies to improve access to substance use treatment and HIV prevention services for young adults on probation in Ukraine

Emily Dauria ¹, Halyna Skipalska,² Lakshmi Gopalakrishnan,³ Oksana Savenko,² Liudmyla Sabadash,² Marina Tolou-Shams,³ Timothy Flanigan,⁴ Peter Navario,^{5,6} Theresa P Castillo^{5,6}

To cite: Dauria E, Skipalska H, Gopalakrishnan L, *et al*. Exploratory qualitative study examining acceptability of strategies to improve access to substance use treatment and HIV prevention services for young adults on probation in Ukraine. *BMJ Open* 2022;**12**:e061909. doi:10.1136/bmjopen-2022-061909

► Prepublication history for this paper is available online. To view these files, please visit the journal online (<http://dx.doi.org/10.1136/bmjopen-2022-061909>).

Received 12 February 2022
Accepted 04 November 2022



© Author(s) (or their employer(s)) 2022. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

For numbered affiliations see end of article.

Correspondence to

Dr Emily Dauria; efd16@pitt.edu

ABSTRACT

Objective Adults <30 years' of age experience elevated HIV-rates in Ukraine. Young adults (YA) involved in the criminal justice system (CJS) are at an increased HIV-risk given elevated rates of substance use, engagement in high-risk sexual behaviour and insufficient healthcare access. The objective of this exploratory study was to investigate the acceptability of strategies to refer and link CJS-involved YA to HIV-prevention and substance use treatment services from CJS settings.

Design We conducted qualitative individual interviews with CJS-involved YA (18–24 years), and CJS stakeholders. Interviews were guided by the Social Ecological Model. Interviews with YA explored substance use and sexual behaviour, and acceptability of strategies to link YA to HIV-prevention and substance use treatment services from CJS. Stakeholder interviews explored system practices addressing HIV-prevention and substance use and addiction. Data were analysed using Inductive Thematic Analysis.

Setting Data were collected in three locales, prior to the 2022 Russian–Ukrainian conflict.

Participants Thirty YA and 20 stakeholders.

Results Most YA were men, reported recent injection drug use and were $M_{\text{age}}=23$ years. YA were receptive to linkage to HIV-prevention services from CJS; this was shaped by self-perceived HIV-risk and lack of access to HIV-prevention services. YA were less receptive to being referred to substance use treatment services, citing a lack of self-perceived need and mistrust in treatment efficacy. Stakeholders identified multilevel contextual factors shaping acceptability of HIV-prevention and substance use treatment from CJS (eg, stigma).

Conclusions Findings should be reviewed as a historical record of the pre-conflict context. In that context, we identified strategies that may have been used to help curtail the transmission of HIV in a population most-at-risk, including CJS-involved YA. This study demonstrates that improving access to substance use treatment and HIV-prevention services via CJS linkage were acceptable if provided in the right conditions (eg, low or no-cost, confidential).

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ Data were collected prior to the escalation of the Russian–Ukrainian conflict in 2022, and findings are presented and interpreted within this context.
- ⇒ To our knowledge, no studies examine the acceptability of potential strategies to connect individuals involved in the criminal justice system (CJS) at high-risk for HIV to HIV-prevention and substance use treatment services in Ukraine; this study addresses that gap in the literature.
- ⇒ Data to inform intervention development were collected both from individuals with lived experience in the CJS (ie, young adults on probation) and from stakeholders employed in this system and recruitment was supported by an existing partnership with a local community-based organisation with considerable expertise in working in the criminal justice system.
- ⇒ Given we recruited in probation settings, our sample of young adults on probation may have been more favourable to HIV-prevention service referral and linkage than young adults on probation who were less engaged in probation (eg, did not attend regular meetings with probation services).
- ⇒ System stakeholders were limited to those employed in the CJS and future research should explore perceptions from public health system stakeholders to understand implementation strategies to bridge CJS and public health systems.

INTRODUCTION

On 24 February 2022, Russia initiated an unprovoked invasion of Ukraine that persists at the time of publication.¹ This conflict has caused mass devastation resulting in an ongoing humanitarian crisis including >4700 civilian deaths, >10 000 civilian casualties, the internal displacement of 6.2 million people and the external displacement of 8 million people from Ukraine.² The conflict led to the



destruction of Ukraine's institutions, including severing the healthcare system and its ability to address emergent and existing population health needs including the prevention and treatment of HIV.²

Prior to the conflict, Ukraine had the second-largest HIV epidemic in Eastern Europe and Central Asia, with more than one-quarter million adults living with HIV.³ In 1995, Ukraine was designated as a low HIV-prevalence country, but by 2020 the number of HIV cases increased 10-fold (from 0.1% to 1.0% among individuals aged 15–49).⁴ Young adults (YA) were a group that was particularly important to target for HIV-prevention activities given that a high proportion of new HIV-infections in Ukraine (>30%) occurred among individuals under 30 years of age.^{5–7} Individuals in this age group were more likely to engage in sexual behaviours that increased their risk of HIV-acquisition (eg, multiple sex partners), experiences early substance use initiation, demonstrated low HIV-prevention knowledge and were less likely to perceive themselves to be at risk for HIV.^{5–7} Other populations that had a significantly higher HIV-prevalence included people who inject drugs (20.9%), men who have sex with men (7.5%), individuals who engage in transactional sex (5.2%), and those involved in the carceral system, who have an HIV-prevalence ranging from 7.2% to 19.4%.^{4,8,9}

One driver of HIV-risk among adults who are involved in the carceral system is injection drug use (IDU). Substance use criminalisation in Ukraine contributes to high levels of carceral system contact and incarceration (129 per 100 000 as compared with a median rate of 118 per 100 000 among other lower-middle income economy countries for which data are available).¹⁰ People who inject drugs who have been to prison have a significantly higher HIV-prevalence than people who inject drugs that have not been to prison (28% vs 13%).⁸ Individuals who experienced incarceration reported a higher number of injection activities per month, and a greater likelihood of sharing injection equipment than those adults who inject drugs who have not experienced incarceration.⁸ Other factors may increase HIV-risk for individuals who have contact with the carceral system in Ukraine, including high rates of comorbidities (eg, sexually transmitted infections), other substance use and psychiatric disorders, engaging in sexual risk behaviours like transactional sex, and low HIV-testing rates.^{5,11}

Context

In 2015, Ukraine reformed national laws to reduce incarceration, such that individuals may be deferred from prison to Criminal Executive Inspections, also known as *probation services*. Since the beginning of 2019, the probation system has monitored 96 636 adults. More recently (2021) ≥59 000 adults were supervised by probation agencies.^{12,13} The expanded probation services supervises two-thirds of all criminal justice system (CJS)-involved adults, the remaining are detained in prisons. There are 24 regional units, and 574 local units: employing >3000 individuals. Given the elevated risk of HIV-acquisition among

YA and individuals involved in the carceral system, it is vital that research explore whether and how a system that they have ongoing contact with, probation, may connect them with health services to address unmet needs.¹³

To our knowledge, no studies have examined the acceptability of potential strategies to connect individuals involved in the CJS at high-risk for HIV to HIV-prevention and substance use treatment services in Ukraine. The present pilot study aims to address this gap and explore this topic among YA, a population with unmet needs. A secondary aim was to identify systems-level barriers and facilitators to successful HIV-prevention and substance use treatment services for this population. As aforementioned, these data were collected prior to the ongoing conflict, and findings should be reviewed as a historical record describing how the networks of services were perceived and functioned prior to the conflict.¹⁴

METHODS

Setting and sample

Data were collected in three urban locales, where members of the Ukrainian-based study team were already engaged in health research in CJS. This study consisted of two participant groups: YA involved in the CJS at high-risk for HIV, and staff members employed in probation services. YAs (aged 18–24 years) were eligible if they reported recent sexual activity (≤90 days prior to court-involvement), spoke Ukrainian or Russian and were currently on probation. Maximum variation methods were used to create a sample that varied with relation to recent use of alcohol or other drugs (≤90 days).¹⁵ All administrative probation staff who worked with YA on probation were eligible. Eligibility was assessed using a brief screener implemented verbally by a member of the study team (~5 min). Screenings were completed in settings that allowed for privacy.

Recruitment

In partnership with a community-based organisation that provides health programming (including HIV-related services) in the CJS in Ukraine,¹⁶ YA on probation were recruited using passive and active methods. Staff distributed study flyers and worked with probation to inform YA on probation about the study (HS, OS and LS). To recruit stakeholders from probation, the study team used convenience sampling and generated an initial list of individuals from the research team's previous work.^{16–18} These individuals received study invitations via email and phone. Although formal snowball sampling techniques were not applied, system stakeholders that participated in the study often referred individuals in their occupational network for screening and, if eligible, study enrolment.

Procedures

This study was guided by the Social Ecological Model (SEM),¹⁹ which highlights that health behaviours are shaped by characteristics and processes operating within

and across multiple levels, including at the individual-level (eg, age, substance use history),²⁰ interpersonal/network-level (eg, sexual partners),²¹ organisational/systems-level (eg, HIV-testing availability),²² community-level (eg, stigma)^{23 24} and policy-levels.²⁵ We conceptualise the formation of probation services as a policy-level exposure that has the potential to impact YA on probation's HIV-risk by altering their sexual and substance use behaviours by way of increased monitoring, mandated behavioural services engagement or offering access to HIV-testing and substance use treatment. Further, SEM notes that YA's interpersonal/network-level and organisational-level supports might mitigate or exacerbate the consequences of probation on their risk behaviours.

Data were collected between November 2018 and August 2019. Ukrainian-based study staff (OS and LS) completed a one-time, individual interviews guided by the SEM. Data were collected in Ukrainian or Russian, depending on the participant's linguistic preference. For YA on probation, interviews explored substance use and sexual behaviour, and the availability of HIV-prevention and substance use treatment services provided to them through probation. This included presenting two vignettes of hypothetical interventions designed to connect them with community-based HIV-prevention and substance use treatment services, assessing participants' acceptability of the proposed intervention strategies, and soliciting suggestions on intervention strategies that emerged from their lived experiences. Among CJS stakeholders, interviews explored perceptions of HIV-related behaviours among YA on probation, the system's responsibility and ability to improve health outcomes, system practices aimed at improving health of YA on probation (eg, HIV-testing, service referral), and acceptability of potential strategies to refer and link YA on probation to substance use treatment and HIV-prevention services. A questionnaire characterised the demographics of YA on probation and, for stakeholders, occupational background. Given the desire to protect participants' confidentiality, no identifiable data were collected. Consistent with previous research,²⁶ YA on probation received a 'gift pack' (eg, hygiene items; ~US\$10). For system stakeholders, compensation was contingent on allowable practices (≤US\$15). Participants received a snack during the interview. Participants provided verbal consent to protect the participant's identity and to engender trust between the research staff and study participants.

Patient and public involvement

Participant groups were not involved in the research design, but they helped identify research priorities. Team members conducted site visits and held in-person meetings with YA on probation, and stakeholders from community-based agencies serving YA involved in the CJS and probation services. The research team plans to collaborate with members from the sample population to inform dissemination plans and products.

Analysis

Interviews were digitally recorded, transcribed and translated to English by a Ukrainian-based transcription and translation company. Members of the Ukrainian-based study team reviewed the transcription and translation to ensure accuracy; discrepancies were rectified prior to data analysis. Data were analysed using inductive thematic analysis (ITA) methods, which allows patterns and meanings to be captured from the data.²⁷ ITA was selected because it is often used to find solutions to real-world problems and provide programme recommendations.²⁷ The codebook was developed based on the SEM, the interview guide and transcripts. Interview transcripts were independently coded line-by-line (open-coding), by two members from the US-based research team (ED and LG) to identify coding categories and themes within each category (axial coding). Incorporating two coders in the open-coding process was used to improve credibility of study findings.²⁸ Coding patterns were compared, and the codebook was refined until consensus was reached. The remaining interviews were coded similarly. All the text in the coded segments was reviewed and the principal investigator (ED) generated memos to highlight connections between categories and subcategories. Quotations were compiled and concepts and relationships pertinent to core categories were developed. To preserve stakeholders' confidentiality, we omitted descriptive data when presenting their quotes. The final set of codes and categories were compared and combined into themes. Preliminary results were shared with stakeholders to enhance the trustworthiness of study findings. Qualitative analyses were facilitated using Atlas.ti V.8.0 (Berlin, Germany). Descriptive statistics were generated using SAS V.9.4 (Cary, North Carolina, USA) to characterise demographic and training backgrounds of YA on probation and system stakeholders.

RESULTS

Thirty YA on probation took part in the study, 86.7% of whom self-identified as men (table 1). The median age among participants was approximately 23 years (range: 21–24 years). Among the participants 43% reported completing at least a secondary education and the majority (66.7%) were employed at the time of the interview. IDU was reported by 60% in the past year; of those reporting recent use, 27.7% reported daily IDU. Participants self-reported alcohol (36.7%) and heroin or other opiates (46.6%) as being the substances with which they experienced the most difficulty. Nearly half of all YA on probation reported having engaged in substance use treatment services in the past (46.7%). Lastly, participants reported having $M=2.3$ sexual partners in the past year. Of the $N=20$ system stakeholders 45.0% reported being between 25 and 34 years and most self-identified as women (90.0%) and reported being employed in the system for 2 years (55.0%).

**Table 1** Select sociodemographic and risk characteristics of young adults (YA) involved in the criminal justice system (N=30)

	YA on probation N (%)
Age, <i>M</i> (SD)	23.3 (0.9)
Gender	
Male	26 (86.7)
Female	4 (13.3)
Level of education	
Secondary graduate	13 (43.3)
Some college, no degree	2 (6.7)
Vocational school	10 (33.3)
Bachelor's degree	5 (16.7)
Has children	8 (26.7)
Employment status	
Employed	20 (66.7)
Unemployed	10 (33.3)
Injection drug use (past 12 months)	18 (60.0)
Substance identified as being a 'serious problem' by participant*	
tranquillisers/barbiturates/sedatives	1 (3.3)
Marijuana	4 (13.3)
Methamphetamines	7 (23.3)
Alcohol	11 (36.7)
Heroin/other opiates	14 (46.6)
Previous receipt of substance use treatment	14 (46.7)
Ever received an HIV test [†]	20 (71.4)
Number of recent sexual partners, <i>M</i> (SD)	2.3 (2.2)

*Participant responses are not mutually exclusive; [†]n=28.

Overview

Below we present perceptions of YA on probation toward receiving referrals and linkage to HIV-prevention and substance use treatment services from the CJS. We explore the acceptability of these intervention options in the context of multilevel factors informed by the SEM (figure 1).

'Here it's better' Perceptions on referral to HIV-prevention services from CJS staff (Scenario 1).

Most participants expressed support for receiving a referral from CJS to testing for HIV in the community (n=22/30) if the service were to become available through partnerships with community-based agencies. The primary reasons shaping their interest was the participants' self-perceived HIV-risk, their lack of knowledge of their HIV-serostatus and that they were not regularly engaged in HIV-testing. Participants identified their HIV-risk as being shaped by their own sexual and substance use behaviours (eg, IDU) and the behaviours of individuals

in their sexual networks. Emphasising their interest in receiving testing for HIV due to their lack of engagement in testing, one man with a history of IDU noted:

I want to be tested, once again, to be honest, with this... like for hepatitis, for HIV, for AIDS... I, to be honest, did not have this test last year, or even more, probably 2 years ago.

The most common reason reported by participants who were receptive to receiving referral to HIV-testing from the CJS, was that they had regular contact with this system. Several participants noted that they would not only be open to a referral from individuals that they had contact with in the CJS but would be receptive to engaging in HIV-testing services that were co-located in carceral settings where they connected with their probation officer. A man with a history of IDU noted:

Of course, here [where they meet their probation officer] it's better, at this place. I report here and the test would be done here. Not [having] to go anywhere else.

Participants did not express concerns about their privacy if they were to be connected to these services through the CJS. Some participants, as highlighted by the non-IDU male participant below, noted that their existing relationship *strengthened* their trust in the system above others they could receive these services from.

[My probation officer] is watching me. And, well, it is better for me to work with her on all that matters than go somewhere [else].

Several factors shaping participants' hesitancy to receive HIV-prevention services or referrals through the CJS (n=5) including that the participants did not perceive a personal need for the services, they did not have time to access these services, or they were already receiving these services elsewhere. We did not identify any differences by gender in participants' acceptance of an HIV-testing referral.

Mixed emotions. Referral to substance use treatment services from CJS staff (Scenario 2).

Despite reporting high levels of substance use, half of the participants were not interested in receiving a referral to treatment from CJS staff (n=15). The primary reason that participants provided for not wanting to receive this referral was that they did not feel as though they needed treatment. While participants acknowledged their frequent use (eg, 9/15 of them reported recent IDU in addition to other substances) they did not perceive themselves to be 'addicted'. The second most frequently reported reason for not wanting to receive a referral was that they did not believe that treatment would work to reduce their substance use.

Of the participants that were interested in receiving a referral to treatment, reducing the negative impact that substance use was having on their daily life was the primary facilitator. One male participant described the



Figure 1 Contextual factors shaping HIV-prevention and substance use treatment service implementation for young adults involved in the criminal justice system as guided by the Social Ecological Model. PrEP, pre-exposure prophylaxis.

negative impact that alcohol use was having on their life when stating:

Alcohol is taking its toll. And honestly it's such a slump, I do not know, how it is with drugs, but alcohol I see, is dragging me down.

Among YA on probation who reported opiate use, including those with a IDU history, opiate substitute therapy was a service of most interest (7/14). Some participants stated that they would be interested in being connected to substance use treatment services via the CJS only if certain conditions were met (n=5): confidential referral and services, free or low-cost services and are offered at a time and place that would not disrupt their schedule. One-quarter of the participants who were supportive of receiving a CJS referral to treatment services, were those that self-reported having previously received treatment.

'We need mental health support' and other services requested by YA on probation.

The primary service requested by YA on probation were mental health services (n=8), specifically referral to a psychologist or peer support group. Most female participants noted a desire for reproductive health services; emphasising this need in the context of their high-risk sexual relationships. Other requested services included

hepatitis C treatment, and social services addressing basic needs (eg, clothing, hygiene).

'Society rejects them a bit' and other contextual factors shaping service implementation for YA on probation.

Stakeholders from probation provided context for the acceptability of prevention service implementation for YA on probation. The cost of HIV-prevention and substance use treatment services was the most-commonly-reported individual-level barrier to successful implementation. This was particularly important given the stakeholders' emphasis on YA on probation's limited financial resources, and the need to address other survival needs (eg, housing, food). At the interpersonal-level, stakeholders identified the strength of their relationship with their clients as a key facilitator to accurately identifying behavioural needs and referring them to resources in the community.

At the organisational-level, stakeholders perceived YA on probation as not disclosing their behavioural health needs to individuals in the CJS for fear that this information might lead them to become further entrenched in the system. One participant described this common perception when stating:

Not everyone understands that we mean well, that we help them... They see it as punishment, to visit us...



they cannot willingly be open or really speak about their problems.

The second barrier was specifically related to female-identifying YA on probation. Participants commented that there was a paucity of services that were gender-responsive, and therefore were not uniquely designed or structured to meet the needs of YA women on probation.

Community-level barriers were most frequently reported. System-stakeholders reported that individuals who engaged in high-risk behaviours associated with HIV-acquisition face significant discrimination, with one participant stating: 'Society rejects them [a] little bit. How is it called? Stigma'. Stakeholders perceived low-levels of HIV-knowledge as the main driver shaping these perceptions. These negative views were also described as extending to individuals involved in the CJS; particularly those at the intersection of substance using behaviours and carceral contact:

These are people who do not deserve pardon, no chance for life and they all have to be either killed, or to have life imprisonment, even if the person has been sentenced for drugs use for the first time.

One exception, as noted by several stakeholders, was that younger adults (≤ 30 years) were perceived to have improved HIV-knowledge and possess less-stigmatising views of individuals living with HIV, those engaging in HIV-risk behaviours or those involved with the carceral system.

Participants described several negative consequences resulting from these community-level factors, including pervasive HIV-stigma, hesitancy to seek out HIV-testing or treatment, or, for people living with HIV/AIDS, a reluctance to disclose their serostatus. Another consequence identified by most stakeholders was that there was diminished support and enthusiasm for the allocation of public funding for HIV-prevention and substance use treatment services for this population: 'The community is totally against the allocation of funds for them'. There were two participants who disagreed with this perception. They perceived the public as supporting substance use and HIV-prevention programming for this population to support the development of a healthy society. One area that most stakeholders agreed would address HIV and substance use related stigma was to improve education of these topics in the school systems and begin this education at a younger age.

Lastly, while public perception of these groups was viewed as a barrier to prevention and treatment-seeking behaviours in the community, several stakeholders ($n=4$) felt that some of their clients were open to being connected to HIV-prevention and substance use treatment services during their contact with the carceral system. These participants perceived contact with the CJS resulting from the criminalisation of substance use as a policy-level intervention that allowed individuals to 'slightly change [their] consciousness, [their] way of life'.

DISCUSSION

The present exploratory study was conducted prior to the escalation of the Russian–Ukrainian war in February 2022, and our findings should be viewed as a historical record documenting participants' perspectives in that context. Saying that, this study is among the first to examine the acceptability of potential strategies to link YA on probation to HIV-prevention and substance use treatment services in Ukraine. We also identified potential barriers and facilitators to successful implementation from the perspectives of YA on probation and CJS stakeholders. Young adults at risk for HIV on probation were receptive to being referred and linked to HIV-prevention services from CJS settings. Self-perceived HIV-risk and lack of consistent access to HIV-prevention services in the community were two factors shaping acceptability. Young adults were less receptive to being referred to substance use treatment services from CJS settings, citing both a lack of need for treatment and a mistrust in treatment efficacy. When asked what other services would be useful, YA on probation expressed a desire to receive linkage to mental health services. System stakeholder participants identified a variety of multilevel contextual factors shaping acceptability of the provision of HIV-prevention and substance use treatment services for this population including cost (individual-level), the quality of existing relationships with CJS-stakeholders (interpersonal-level), trust in the CJS (organisational-level) and community-level stigma and discrimination towards people who use substances, are involved in the CJS, or engage in other HIV-risk behaviours.

Study participants noted the pervasive stigma and discrimination experienced by YA on probation engaged in HIV-risk behaviours, particularly those who report using substances. Stigma based on any one or multiple components of an individual's perceived identity or actual group membership, persists as a principal factor shaping HIV-risk.^{29–31} Stigma was associated with refusal of HIV-testing, reduced access to healthcare and poor engagement in HIV-prevention efforts.^{32–38} Our results contribute to a growing body of evidence naming the unique discrimination experienced by individuals involved in the CJS, many of whom have multiple, and intersecting stigmatised identities.^{39–41} Despite the universal recognition that stigma negatively impacts HIV-prevention efforts including substance use treatment engagement,^{34 42 43} and that individuals most-at-risk of HIV face multiple forms of stigma and discrimination,^{44–47} there is a dearth of HIV-prevention interventions targeting intersectional stigma.^{31 48} There is, however, emerging research in this area, including for CJS-involved adults.⁴⁹ Several strategies that could be employed to mitigate the impact that stigma and discrimination have on HIV-prevention and substance use treatment access among this population include using peer navigators to refer and link CJS-involved adults to community-based care; a model that has been successful for CJS-involved populations in other locales.^{50–52} Other strategies emerging from our results

include education campaigns focused on substance use and dependency, and establishing referral systems, and co-locating substance use and HIV-prevention services in CJS.^{39 53 54} These areas should be explored in larger, representative samples assessing acceptability and feasibility.

This study included a small sample of YA women on probation; however, our findings suggest that the risk behaviours and service needs of this population are unique and few programmes are tailored to this group. In Ukraine, women account for roughly one-third of all new HIV-infections.⁵⁵ Evidence suggests that access to substance use treatment, HIV care and other health services is worse for women who use drugs than men.^{56 57} Experiences of gender-based violence are of particular concern given the high in-country prevalence: 75% of women report having experienced violence and one-third report physical or sexual violence.⁵⁸ Substance use, HIV-risk and violence are synergistic epidemics among women, especially those involved in the CJS due, in part, to pre-carceral substance use and transactional sex work.^{59 60} Future research should be conducted with a representative sample of CJS-involved women to better elucidate factors that might shape the development of interventions that may be responsive to the compounding burdens they experience.

Young adults on probation expressed an interest in receiving mental health services. Individuals involved in the CJS have high rates of mental health diagnoses^{61 62}; while current estimates in Ukraine are unavailable, the WHO estimated that almost 40% of prisoners in Europe have a mental health diagnosis.⁶³ Recent work in Ukraine identified high levels of unmet need and recommended several reforms including timely diagnosis, provision of adequate care, incorporating multidisciplinary mental health teams to deliver holistic mental health services and creating protocols for treatment linkage during re-entry.⁶⁴ While this assessment focused on detention settings, similar systems of screening, referral and linkage to care could be employed for CJS-involved adults living in the community (ie, probation), especially in the context of reforms that may increase the number of adults diverted from detention. Further, given our results suggest less mental health service-related stigma and a desire for these services, future programmes may consider integrating mental health services with substance use treatment.

It should be noted that after these data were collected but prior to the conflict escalation, several reforms were implemented in the probation system, including continued efforts to close detention centres, and provide consultation to clients who are living with HIV, tuberculosis and viral hepatitis C. Additional programming was available to assist individuals who were re-entering the community from CJS to reduce recidivism and foster resocialisation. The reforms that were being pursued within Ukraine prior to the conflict escalation may have provided a unique opportunity to improve HIV-prevention and substance use treatment access among this population. Despite that progress, however, the

conflict has fundamentally altered the country's systems and institutions. At the time of the writing of this manuscript 30 CJS settings have been destroyed or damaged; resulting in the injury of individuals working and detained in those settings.⁶⁵ Further, the Ukrainian government has temporarily lost control of the remaining CJS institutions, impacting >3000 individuals.⁶⁵ This loss of control has resulted in a number of crises including, but not limited to: (1) lack of communication with CJS settings, impacting the ability to address individuals detained and working in these settings' displacement, transportation and evacuation, and the ability to access humanitarian aid (eg, acute medical care, food, clothing); (2) the exploitation of CJS infrastructure for military personnel, hardware and equipment of the Russian Federation; (3) disrupted access to provide essential medicine to individuals living with HIV, TB or those in need of treatment for substance use disorders; (4) lack of access to preventive and medical services, like HIV testing.⁶⁵ Consequently, prevention and treatment health services, including for HIV and for substance use disorders, have been disrupted; leading many to fear of a surge of infectious disease in Ukraine and neighbouring countries amid the ongoing conflict.⁶⁶⁻⁶⁸

Limitations

We present our findings in the context of several notable limitations. First, YA on probation were recruited in CJS locales where HIV programming was available and where the study partners had pre-existing relationships. Study participants were not recruited directly from these programmes but, they might have been more favourable to HIV-prevention service referral and linkage than YA on probation in locales where service access may be limited, or among YA who are less engaged in probation. Further, data collection sites did not represent the full scope of geographical and geopolitical diversity in Ukraine. Future research should examine whether and how perceptions of substance use treatment and HIV prevention services among YA on probation differ when data are collected from a more representative sample. System stakeholders were limited to those employed in the CJS. Additional research should explore perceptions from public health system stakeholders, especially those working in HIV-prevention and substance use treatment services, to understand implementation strategies to bridge CJS and public health systems. Given the limited availability of pre-exposure prophylaxis for HIV-prevention in Ukraine, participants were not asked to share their acceptability of this strategy; an area ripe for future research as access to biomedical strategies expand. Lastly, and most notably, these data were collected among people and within systems that have been completely disrupted and destabilised due to the ongoing war. Research conducted prior to this conflict serves to document perceptions that may no longer be relevant; future efforts should aim to understand how the conflict may impact study results.

CONCLUSION

Prior to the escalation of the Russian–Ukrainian conflict in February 2022, we conducted an exploratory study to investigate the acceptability of strategies to refer and link CJS-involved YA to HIV-prevention and substance use treatment services from CJS. In this pre-war context, we identified strategies that may have been used to help curtail the transmission of HIV in a population most-at-risk, including YA involved in the CJS. This study demonstrates that prior to the escalation of the conflict, improving access to substance use treatment and HIV-prevention services for YA on probation via CJS-referrals and linkage was acceptable if provided in the conditions that service consumers and system stakeholders identified with. Results highlight important factors at multiple levels that may have hindered or facilitated successful implementation and uptake of these health services.

Author affiliations

¹Behavioral and Community Health Sciences, University of Pittsburgh, Pittsburgh, Pennsylvania, USA

²HealthRight International, Kyiv, Ukraine

³Department of Psychiatry and Behavioral Sciences, University of California San Francisco, San Francisco, California, USA

⁴Brown University, Providence, Rhode Island, USA

⁵School of Public Health, New York University, New York, New York, USA

⁶HealthRight International, New York, New York, USA

Acknowledgements We would like to thank the participants for sharing their time and experiences with us, and the collaborating agencies for supporting the work, in particular Probation Services in Ukraine.

Contributors ED, TF, HS, PN and MT-S contributed to the design of the study. OS and LS collect the data with support from HS, TPC and ED. ED, LG, TPC and HS analysed the study data. ED wrote the first draft. All authors contributed to interpretation of the findings and reviewed the full draft of the paper. All authors approved the final manuscript; ED is the guarantor.

Funding This work was supported by the National Institute on Drug Abuse (Grants R25DA037190 (principal investigator (PI): Beckwith), and T32DA013911 (PI: TF)). ED's time was also supported by NIDA (R34DA050480 (PI: ED)). The views expressed in this publication are those of the authors and not necessarily those of the funding agencies.

Competing interests None declared.

Patient and public involvement Patients and/or the public were involved in the design, or conduct, or reporting, or dissemination plans of this research. Refer to the Methods section for further details.

Patient consent for publication Not applicable.

Ethics approval Ethical approval was obtained from the Institutional Review Board at the University of California San Francisco (Study Number 20-30358) and the Ukrainian Sociological Association (no number was provided). All participants provided verbal consent. Participants gave informed consent to participate in the study before taking part.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available upon reasonable request.

Open access This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>.

ORCID iD

Emily Dauria <http://orcid.org/0000-0003-4706-7782>

REFERENCES

- Jazeera A. Russian forces launch full-scale invasion of Ukraine. in Al Jazeera, 2022
- World Health Organization. *WHO's Response to the Ukraine Crisis*. World Health Organization, 2022.
- Avert.org. HIV and AIDS in Ukraine, 2020. Available: <https://www.avert.org/professionals/hiv-around-world/eastern-europe-central-asia/ukraine> [Accessed 2021 October 27].
- AIDSinfo.org. Country Factsheets: Ukraine, 2020. Available: <https://aidsinfo.unaids.org/> [Accessed 2021 October 27].
- Azbel L, Wickersham JA, Grishaev Y, *et al*. Burden of infectious diseases, substance use disorders, and mental illness among Ukrainian prisoners transitioning to the community. *PLoS One* 2013;8): :e59643.
- Saveyev *et al*. Strengthening the adolescent component of the National HIV/AIDS programme 2018.
- ed.Currie C, Roberts C, Morgan A. Young people's health in context; Health behaviour in school-aged children (HBSC) study: International report from the 2001/2002 survey 2004.
- Altice FL, Azbel L, Stone J, *et al*. The perfect storm: incarceration and the high-risk environment perpetuating transmission of HIV, hepatitis C virus, and tuberculosis in eastern Europe and central Asia. *Lancet* 2016;388): :1228–48.
- Hilton J, Douillet N. *In eastern Ukraine, a glimmer of hope for women inmates living with HIV*. United Nations Development Program, 2017.
- Widra E, Herring T. *States of incarceration: the global context 2021*. Prison Policy Initiative, 2021.
- UNAIDS. Country report: Ukraine 2020.
- Ukraine probation services, probation center impact review: 2020 2021.
- Interagency Coordination Council for Juvenile Justice. *Consolidated report: data on juveniles who are in contact with the law*. Ministry of Justice of Ukraine, 2019.
- Bigg MM. *A timeline of the tensions between Russia and Ukraine*, in *The New York Times*. New York, 2022.
- Patton MQ. *Qualitative research and evaluation methods*. Third Edition ed.. London: Sage Publications, Inc, 2002.
- International H. HealthRight international in Ukraine signs a memorandum of cooperation with the Ministry of justice of Ukraine on uniting efforts in HIV prevention, testing, and treatment for youth and women in conflict with the law, 2021. Available: <https://healthright.org/news/article/healthright-international-in-ukraine-signs-a-memorandum-of-cooperation-with-the-ministry-of-justice-of-ukraine-on-uniting-efforts-in-hiv-prevention-testing-and-treatment-for-youth-and-women-in-confli/> [Accessed cited 2022 January 5].
- Tripathi V, King EJ, Finnerty E, *et al*. Routine HIV counseling and testing during antenatal care in Ukraine: a qualitative study of the experiences and perspectives of pregnant women and antenatal care providers. *AIDS Care* 2013;25): :680–5.
- Dauria E, Tolou-Shams M, Skipalska H, *et al*. Outcomes of the "STEPS" HIV prevention training program for young males in the penitentiary institution, Ukraine. *Int J Prison Health* 2018;14:101–8.
- Stokols D. Establishing and maintaining healthy environments. toward a social ecology of health promotion. *Am Psychol* 1992;47): :6–22.
- Centers for Disease Control and Prevention. Violence prevention: the Social-Ecological model: a framework for prevention, 2020. Available: <https://www.cdc.gov/violenceprevention/about/social-ecologicalmodel.html> [Accessed cited 2021 October 27].
- Drumright LN, Gorbach PM, Holmes KK. Do people really know their sex partners? Concurrence, knowledge of partner behavior, and sexually transmitted infections within partnerships. *Sex Transm Dis* 2004;31): :437–42.
- Richardson LD, Norris M. Access to health and health care: how race and ethnicity matter. *Mt Sinai J Med* 2010;77): :166–77.
- Diez Roux AV. Investigating neighborhood and area effects on health. *Am J Public Health* 2001;91:1783–9.
- Diez Roux A-V. Neighborhoods and health: where are we and where do we go from here? *Revue d'Épidémiologie et de Santé Publique* 2007;55:13–21.
- Hosek SG, Harper GW, Lemos D, *et al*. An ecological model of stressors experienced by youth newly diagnosed with HIV. *J HIV AIDS Prev Child Youth* 2008;9): :192–218.
- Busza JR, Balakireva OM, Teltschik A, *et al*. Street-Based adolescents at high risk of HIV in Ukraine. *J Epidemiol Community Health* 2011;65:1166–70.
- Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006;3): :77–101.
- Klooster E, Koenders N, Vermeulen-Holsen J, *et al*. Healthcare professionals feel empowered by implementing a hospital-based

- multifaceted intervention: a qualitative study using inductive thematic analysis. *BMC Health Serv Res* 2022;22): :903.
- 29 Earnshaw VA, Bogart LM, Dovidio JF, *et al.* Stigma and racial/ethnic HIV disparities: moving toward resilience. *Am Psychol* 2013;68): :225–36.
 - 30 Earnshaw VA, Chaudoir SR. From conceptualizing to measuring HIV stigma: a review of HIV stigma mechanism measures. *AIDS Behav* 2009;13): :1160–77.
 - 31 Mahajan AP, Sayles JN, Patel VA, *et al.* Stigma in the HIV/AIDS epidemic: a review of the literature and recommendations for the way forward. *AIDS* 2008;22 Suppl 2): :S67–79.
 - 32 Golub SA, Gamarel KE. The impact of anticipated HIV stigma on delays in HIV testing behaviors: findings from a community-based sample of men who have sex with men and transgender women in New York City. *AIDS Patient Care STDS* 2013;27): :621–7.
 - 33 Peterson Met *al.* Institutional distrust among gay, bisexual, and other men who have sex with men as a barrier to accessing pre-exposure prophylaxis (PrEP). *AIDS Care* 2018:1–6.
 - 34 Stangl AL, Lloyd JK, Brady LM, *et al.* A systematic review of interventions to reduce HIV-related stigma and discrimination from 2002 to 2013: how far have we come? *J Int AIDS Soc* 2013;16): :18734.
 - 35 Sweeney SM, Venable PA. The association of HIV-related stigma to HIV medication adherence: a systematic review and synthesis of the literature. *AIDS Behav* 2016;20): :29–50.
 - 36 Turan JM, Bukusi EA, Onono M, *et al.* HIV/AIDS stigma and refusal of HIV testing among pregnant women in rural Kenya: results from the MAMAS study. *AIDS Behav* 2011;15): :1111–20.
 - 37 Pitpitang EV, Kalichman SC, Eaton LA, *et al.* Aids-Related stigma, HIV testing, and transmission risk among patrons of informal drinking places in Cape town, South Africa. *Ann Behav Med* 2012;43:362–71.
 - 38 Calabrese SK, Underhill K. How Stigma Surrounding the Use of HIV Preexposure Prophylaxis Undermines Prevention and Pleasure: A Call to Destigmatize "Truvada Whores". *Am J Public Health* 2015;105): :1960–4.
 - 39 Dauria EF, Levine A, Hill SV, *et al.* Multilevel factors shaping awareness of and attitudes toward pre-exposure prophylaxis for HIV prevention among criminal Justice-Involved women. *Arch Sex Behav* 2021;50:1743–54.
 - 40 Brinkley-Rubinstein L, Peterson M, Arnold T, *et al.* Knowledge, interest, and anticipated barriers of pre-exposure prophylaxis uptake and adherence among gay, bisexual, and men who have sex with men who are incarcerated. *PLoS One* 2018;13): :e0205593.
 - 41 Peterson M, Nowotny K, Dauria E, *et al.* Institutional distrust among gay, bisexual, and other men who have sex with men as a barrier to accessing pre-exposure prophylaxis (PrEP). *AIDS Care* 2019;31): :364–9.
 - 42 Stangl A, Brady L, Fritz K. *Strive technical brief: measuring HIV stigma and discrimination*. International Center for Research on Women: Washington D.C, 2018.
 - 43 Brown L, Macintyre K, Trujillo L. Interventions to reduce HIV/AIDS stigma: what have we learned? *AIDS Educ Prev* 2003;15): :49–69.
 - 44 Kerrigan D, Kennedy CE, Morgan-Thomas R, *et al.* A community empowerment approach to the HIV response among sex workers: effectiveness, challenges, and considerations for implementation and scale-up. *Lancet* 2015;385): :172–85.
 - 45 Crandall CS, stigma M. Multiple stigma and AIDS: illness stigma and attitudes toward homosexuals and IV drug users in AIDS-related stigmatization. *J Community Appl Soc Psychol* 1991;1): :165–72.
 - 46 Parker R, Aggleton P. HIV and AIDS-related stigma and discrimination: a conceptual framework and implications for action. *Soc Sci Med* 2003;57): :13–24.
 - 47 Logie CH, James L, Tharao W, *et al.* HIV, gender, race, sexual orientation, and sex work: a qualitative study of intersectional stigma experienced by HIV-positive women in Ontario, Canada. *PLoS Med* 2011;8): :e1001124.
 - 48 Turan JM, Elafros MA, Logie CH, *et al.* Challenges and opportunities in examining and addressing intersectional stigma and health. *BMC Med* 2019;17): :7.
 - 49 National Institutes of Health. Reporter: kINSHIP: peer navigators addressing intersectional stigma to improve HIV prevention among criminal-justice involved women, 2021. Available: <https://reporter.nih.gov/project-details/9926752> [Accessed cited 2021 October 20].
 - 50 Myers JJ, Kang Dufour M-S, Koester KA, *et al.* The effect of patient navigation on the likelihood of engagement in clinical care for HIV-infected individuals leaving jail. *Am J Public Health* 2018;108): :385–92.
 - 51 Myers JJ, Koester KA, Kang Dufour M-S, *et al.* Patient navigators effectively support HIV-infected individuals returning to the community from jail settings. *Int J Prison Health* 2017;13): :213–8.
 - 52 Cunningham WE, Weiss RE, Nakazono T, *et al.* Effectiveness of a peer navigation intervention to sustain viral suppression among HIV-positive men and transgender women released from jail: the link La randomized clinical trial. *JAMA Intern Med* 2018;178): :542–53.
 - 53 Kennedy-Hendricks A, Bandara S, Merritt S, *et al.* Structural and organizational factors shaping access to medication treatment for opioid use disorder in community supervision. *Drug Alcohol Depend* 2021;226): :108881.
 - 54 Brinkley-Rubinstein L, Dauria E, Tolou-Shams M, *et al.* The path to implementation of HIV pre-exposure prophylaxis for people involved in criminal justice systems. *Curr HIV/AIDS Rep* 2018;15): :93–5.
 - 55 Ukraine harmonized AIDS report. Ukraine harmonized AIDS response progress report 2014.
 - 56 Des Jarlais DC, Boltaev A, Feelemyer J, *et al.* Gender disparities in HIV infection among persons who inject drugs in central Asia: a systematic review and meta-analysis. *Drug Alcohol Depend* 2013;132 Suppl 1): :S7–12.
 - 57 Des Jarlais DC, Arasteh K, Hagan H, *et al.* Persistence and change in disparities in HIV infection among injection drug users in New York City after large-scale syringe exchange programs. *Am J Public Health* 2009;99 Suppl 2): :S445–51.
 - 58 United nations, world drug report: 2016 2016.
 - 59 Altice FL, Marinovich A, Khoshnood K, *et al.* Correlates of HIV infection among incarcerated women: implications for improving detection of HIV infection. *J Urban Health* 2005;82:312–26.
 - 60 Meyer JP, Springer SA, Altice FL. Substance abuse, violence, and HIV in women: a literature review of the syndemic. *J Womens Health* 2011;20:991–1006.
 - 61 Fazel S, Danesh J. Serious mental disorder in 23 000 prisoners: a systematic review of 62 surveys. *The Lancet* 2002;359:545–50.
 - 62 Bromet EJ, Gluzman SF, Paniotto VI, *et al.* Epidemiology of psychiatric and alcohol disorders in Ukraine: findings from the Ukraine world mental health survey. *Soc Psychiatry Psychiatr Epidemiol* 2005;40:681–90.
 - 63 Penal Reform International. Health in prisons: realizing the right to health 2007.
 - 64 Garman Get *al.* *Reforming prison mental health services in Ukraine*. Mind and Law: Forensic Science International, 2020: 1. 100011.
 - 65 Skipalska HDauria E, ed. *Personal communication related to the status of the penal institutions in Ukraine after the Russian and Ukrainian conflict escalation in February 2022*. 2022.
 - 66 Roberts L. Surge of HIV, tuberculosis and COVID feared amid war in Ukraine. *Nature* 2022;603:557–8.
 - 67 The global fund, conflict in Ukraine: maintaining lifesaving HIV and TB services 2022.
 - 68 UNAIDS. Unaid warns that war in Ukraine risks a humanitarian catastrophe for people living with and affected by HIV 2022.