Research Square

Preprints are preliminary reports that have not undergone peer review.
They should not be considered conclusive, used to inform clinical practice,
or referenced by the media as validated information.

Perspectives of clients and providers on factors influencing opioid agonist treatment uptake among HIV-positive people who use drugs in Indonesia, Ukraine and Vietnam: HPTN 074 study

Tetiana Kiriazova (t.kiryazova@gmail.com)
UIPHP https://orcid.org/0000-0002-8480-6591
Vivian F. Go
University of North Carolina at Chapel Hill
Rebecca B. Hershow
University of North Carolina at Chapel Hill
Erica L. Hamilton
FHI 360
Riza Sarasvita
Universitas Methodist Indonesia
Quynh Bui
Yen Hoa Health Clinic
Kathryn E. Lancaster
Ohio State University
Kostyantyn Dumchev
UIPHP
Irving F. Hoffman
University of North Carolina at Chapel Hill
William C. Miller
Ohio State University
Carl A. Latkin
Johns Hopkins University

Research

Keywords: People who inject drugs, Barriers to care, Medication-assisted treatment (MAT), drug treatment, Indonesia, Ukraine, Vietnam, in-depth interviews

Posted Date: September 12th, 2020

DOI: https://doi.org/10.21203/rs.3.rs-42695/v2

License: This work is licensed under a Creative Commons Attribution 4.0 International License. Read Full License

Version of Record: A version of this preprint was published on October 1st, 2020. See the published version at https://doi.org/10.1186/s12954-020-00415-x.

Abstract

Background: Opioid agonist treatment (OAT) is an effective method of addiction treatment and HIV prevention. However, globally, people who inject drugs (PWID) have insufficient OAT uptake. To expand OAT access and uptake, policy-makers, program-developers and health care providers should be aware of barriers to and facilitators of OAT uptake among PWID.

Methods: As a part of the HPTN 074 study, which assessed the feasibility of an intervention to facilitate HIV treatment and OAT in PWID living with HIV in Indonesia, Ukraine, and Vietnam, we conducted in-depth interviews with 37 HIV-positive PWID and 25 health care providers to explore barriers to and facilitators of OAT uptake. All interviews were audio-recorded, transcribed, translated into English, and coded in NVivo for analysis. We developed matrices to identify emergent themes and patterns.

Results: Despite some reported country-specific factors, PWID and health care providers at all geographic locations reported similar barriers to OAT initiation, such as complicated procedures to initiate OAT, problematic clinic access, lack of information on OAT, misconceptions about methadone, financial burden, and stigma towards PWID. However, while PWID reported fear of drug interaction (OAT and antiretroviral therapy), providers perceived that PWID prioritized drug use over caring for their health and hence were less motivated to take up ART and OAT. Motivation for a life change and social support were reported to be facilitators.

Conclusion: These results highlight a need for support for PWID to initiate and retain in drug treatment. To expand OAT in all three countries, it is necessary to facilitate access and ensure low-threshold, financially affordable OAT programs for PWID, accompanied with supporting interventions. PWID attitudes and beliefs about OAT indicate the need for informational campaigns to counter misinformation and stigma associated with addiction and OAT (especially methadone).

Introduction

Medication-assisted treatment (MAT) is an effective HIV prevention and treatment engagement strategy for opioid-dependent people who inject drugs (PWID) in Eastern Europe and South-Eastern Asia, where the HIV epidemic is still significantly driven by injection drug use [1, 2]. Globally, MAT improves health, reduces comorbidity and mortality [3, 4], promotes access to health care, and enhances quality of life [5, 6]. MAT also reduces risks of HIV transmission, overdoses, crime, and incarceration [7–9]. For PWID living with HIV, MAT also improves linkage to HIV care, adherence to antiretroviral therapy (ART), and HIV treatment outcomes [10–15].

Despite these well-documented benefits of MAT, poor scale-up, low coverage and poor retention diminish its potential benefits. Coverage with MAT and needle and syringe programs (NSP) remains poor at the global level, especially in the regions with the largest populations of PWID (East and Southeast Asia, Eastern Europe, and North America) [16, 17]. Current MAT coverage is insufficient to impact the epidemics of HIV and hepatitis C among PWID in many countries [16, 17]. Although buprenorphine is sometimes available, most programs in developing countries offer methadone maintenance therapy as the main drug and program for MAT.

PWID experience numerous multi-level barriers to enrollment and retention in MAT. These barriers include structural and institutional barriers (bureaucracy, complex entry process, financial and logistical barriers) [18–21], stigma towards PWID and MAT patients [22, 23], and misconceptions among patients and providers about benefits of methadone treatment [18, 5, 24]. Facilitators to MAT include psychological, social, and financial support, availability of integrated addiction and HIV treatment, and MAT education [25, 26]. Additionally, PWID engagement in MAT may be influenced by country-specific individual, institutional, structural, and policy-related factors [27, 28, 19].

A better understanding of factors that may affect initiation and retention in medication-assisted treatment among PWID living with HIV from both provider and PWID participant perspectives and across several countries might provide valuable insight into intervention components needed to improve MAT uptake and adherence.

HPTN 074 study evaluated an integrated intervention to facilitate HIV care and substance use treatment among PWID living with HIV in Indonesia, Ukraine, and Vietnam [29]. In HPTN 074, we conducted two rounds of qualitative interviews with study participants and health care providers to explore feasibility, sustainability, and strengths and weaknesses of the intervention in addressing barriers and/or enhancing facilitators among PWID living with HIV. In this paper, we present an analysis of the baseline qualitative data to describe multilevel barriers to and facilitators of MAT uptake among PWID' and providers' perspectives across three sites.

Methods

Study Design

HPTN 074 was a multi-site, two-arm, randomized controlled trial conducted to determine the feasibility of a future assessment of an integrated intervention combining psychosocial counseling and supported referrals for ART and MAT for HIV-positive PWID, to reduce HIV transmission among their injection partners, compared to routine care for HIV-positive PWID. The HPTN 074 study and the intervention have been described in detail elsewhere [29–31].

To evaluate the feasibility of the HPTN 074 integrated intervention, two rounds of in-depth interviews were conducted with study participants (PWID living with HIV) randomized to the intervention group, and their health care providers (physicians and counselors / system navigators implementing the intervention) across three study sites (Kyiv, Ukraine; Thai Nguyen, Vietnam; and Jakarta, Indonesia) [30]. We present data from the first round of the qualitative interviews conducted in June 2015 – March 2016, which was 1–3 months after each participant had enrolled in the trial and had completed introductory intervention sessions. As one of the intervention goals was to increase enrollment and retention in MAT, we anticipated that these interviews would highlight barriers and facilitators to MAT uptake.

Study Sites

The health systems providing substance use treatment to PWID across three countries are briefly described below.

Indonesia

The Government of Indonesia provides NSP and MAT in areas with high prevalence of PWID [32]. The Ministry of Health (MoH), the Ministry of Social Affair, and the Indonesia National Narcotics Board are responsible for drug treatment in Indonesia throughout outpatient (including MAT with methadone and buprenorphine) and short-term and long-term inpatient treatment programs. The MoH launched MAT with liquid methadone in 2006; the program reached its peak in 2009 with approximately 2900 clients in total, but then decreased gradually, the number of active methadone clients being 2300 in 2015 [33, 34]. Now methadone program is delivered mostly by primary health care settings. MAT with buprenorphine is not funded by the MoH but is available as a private pay-for-service option in government hospitals.

To access MAT, clients need to be diagnosed with opioid dependence, be 18 years or older, and have a family or a support person to help with adherence to treatment. Methadone is provided for free, but clients need to pay registration fee (about 0.5 US dollar in primary health care and 1.5 US dollar in the hospital). Most of the clinics do not have designated staff to provide counseling to the clients; doctors and/or nurses provide limited psychosocial support, usually focused on clinical issues such as client's adherence and MAT dosage. Almost 40% of methadone clients were simultaneously using other drugs, mostly benzodiazepines and/or methamphetamine, according to unpublished data of the Atma Jaya AIDS & Research Center.

Ukraine

Health services were designed as a vertical system with parallel clinics offering specialized care with limited coordination among them. HIV, substance use, and TB treatment are mostly delivered at separate clinics by separate specialties [35]. Current health care reform aims at decentralization of such services.

The MAT with methadone started in Ukraine in 2008 by the MOH, and as of January 1, 2020 expanded to 11298 patients, compared with 1113 patients on buprenorphine [36]. Free MAT with methadone is available in all country regions, mostly at narcology facilities; it can also be provided at HIV and TB treatment facilities, and recently has become available in primary care facilities in several regions. To receive MAT, a person must be diagnosed with “opioid use disorder” and be registered at the “Narcology Registry” of the State Narcology Service, independently of where MAT is provided. This official name-based registration has been reported as a barrier to MAT because of certain restrictions in employment and inability to obtain a driver’s license, as well as harassment by police [18, 37]. Methadone is free for patients; however, to enter the program, a person must go through paid medical examinations and laboratory tests. Since March 2016, an amendment to the MoH Order No. 200 allowed patients who had been on MAT for at least 6 months to receive take-home doses or get MAT in pharmacies by prescription [38].

Vietnam

The health system was designed as a vertical system overseen by the MoH. In Vietnam, personal and identifying information about MAT patients is confidential by law [34]. Any person who has been registered as a drug user but is not on MAT can be subject to mandatory drug treatment for up to 2 years through a court decision. Two governmental authorities are in charge of drug treatment: the Ministry of Labor and Social Affairs manage detoxification programs for PWID, while the MoH manages MAT across the country.

In 2008, first methadone program was pilot tested in six clinics in Vietnam. Since then, MAT was quickly scaled up nationwide, by mid-2015 being provided by more than 180 facilities and covering approximately 35000 patients in 50 provinces [39]. By March 01, 2017, 280 MAT clinics across the country were providing treatment for 51318 patients [40]. PWID receive methadone for free, but have to pay for laboratory tests before MAT initiation. In a number of provinces, MAT programs collect fees from patients in order to cover costs; this co-payment places significant financial burden on patients and negatively influences MAT access and adherence [39]. Only one site in Ho Chi Minh City provides buprenorphine because of its high costs compared with methadone.

Data Collection

Each site in the HPTN 074 study purposively sampled 7 to 10 health care providers for the interviews, including infectious disease and addiction physicians from HIV and addiction treatment clinics, and all study counselors / systems navigators (SN) across all three sites, who provided intervention sessions and support to the intervention participants. In addition, each site selected 7 to 15 PWID living with HIV, of those who had been randomized to the intervention arm. PWID were recruited to the HPTN 074 by trained outreach workers through HIV testing sites, community outreach, and injection network referrals [31].

The semi-structured in-depth interviews were conducted based on a standard interview guide that was pilot tested for cultural appropriateness and used across all sites. Trained interviewers conducted 60-90-minute interviews in a private room at the study site’s office, local clinic, or other convenient place. The interview guide covered the following topics: barriers to and facilitators of ART and substance use treatment and perceptions of the HPTN 074 intervention, including SN support and counseling session content. All procedures (screening, written informed consent, and interview) were conducted in the local language. Each participant received the equivalent of 8–10 USD compensation for time and travel to complete the interview. All interviews were audio-recorded, transcribed verbatim, translated into English, and imported into NVivo11 software for coding and analysis.

Data Analysis

Details of the data analysis are described elsewhere [30]. Two senior data analysts from University of North Carolina-Chapel Hill were responsible for cross-site data analysis with support from the qualitative supervisor at each site. The senior data analysts developed a codebook with definitions of each code as well as instructions on the codes application. The codebook was organized by the main topics that were included in the interview guide. Each of the main content areas included 3 second-level sub-codes: informational, motivational, and financial barriers. Unanticipated barriers and facilitators which

emerged in the data were subsequently included in the codebook. Study sites also added site-specific codes, to explore unique characteristics of their sites.

At each site, an experienced qualitative supervisor trained staff and supervised data collection, interviews transcription and translation, and led coding. The supervisors checked transcription and translation quality by reviewing 10% of the interviews against original audio-files. Then a team of centralized and local data coders indexed data by topics applying the codes according to the codebook. Senior data analysts checked 10% of all coded transcripts; coding differences were resolved by consensus, and code definitions were updated accordingly.

A matrix was developed to explore emergent themes and patterns around barriers and facilitators to MAT uptake [41]. Barriers and facilitators were compared across participant type (PWID vs. provider) and study sites, to identify similarities and differences in reported barriers and facilitators. Summary reports were generated and reviewed by the team.

Results

This qualitative study sample included 62 participants: 25 health care providers and 37 HIV-positive PWID across the HPTN 074 study sites in three countries (Table 1).

Seventeen providers were clinicians and 8 were SNs. PWID were predominantly male (n=32; 86.5%); female PWID were represented only in Ukraine (5 of 15 participants or 33%), which reflected PWID gender distribution at all three sites [31]. The median age of PWID was 35 years; they were slightly younger in Ukraine and older in Vietnam. On average, over half were unemployed.

Barriers to MAT uptake by PWID living with HIV

Overall, PWID and their health care providers across all sites reported numerous, similar barriers to MAT initiation, although there were some country-specific differences (Table 2).

Complicated entry to MAT program

At all three sites, PWID talked about complicated entry to MAT, combined with a limited number of available treatment slots, and waiting lists to start MAT.

Interviewer (I): How long do the PWID have to wait until they get methadone?

Respondent (R): In case of waiting list, just wait until someone dies. Then the next drug user can automatically fill the vacant position…

I: How long did you wait?

R: About 7 months until they called me.

I: Did that mean some methadone client had died?

R: Yes, I guess so. ***(PWID, male, 36 y.o., Indonesia)***

In Vietnam, PWID talked about multiple procedural barriers and strict admission requirements: local community quotas to enroll in MAT - "*only4-5 persons every year*" ***(PWID, male, 37 y.o., Vietnam)***, need to wait for authorities' approval of one's application for MAT, and family presence required for registration at MAT site, which was also the case in Indonesia. According to the respondents, some PWID may want to start MAT, but are unable to meet requirements, not having relatives to accompany them to the MAT site.

Similar to the PWID, most providers in Indonesia and Vietnam described admission requirements: bureaucracy and tedious paperwork, required presence of a family member, and the need to obtain the local authorities' approval.

I: Which step is the most difficult?

R: The first step, meeting administrative requirements, because not everyone has an ID card and not everyone has a family member. Usually the junkies have already been disowned by their families, and the families do not want to know about their condition anymore. ***(Counselor/SN, female, Indonesia)***

However, according to a provider in Vietnam, the admission procedure was simplified recently, which ironically led to a problem with site capacity mentioned by PWID: MAT facilities have insufficient number of treatment slots to accommodate all the PWID seeking program entry.

The demand on MAT is very high. 270 patients are in the clinic now, exceeding the possible threshold of 150 patients; and the demand for treatment is still high. Current instruction prohibits to receive more patients because it is over the capacity limit to provide services. ***(SN / physician at ART clinic, Vietnam)***

Problematic clinic access

Clinic inaccessibility was a persistent theme in PWID and provider accounts across all sites. Most PWID in Vietnam and some in Indonesia reported daily long trips by motorbike or public transport to their MAT clinic - "*about three times transport change"* (***PWID, male, 37 y.o., Indonesia***) - as a huge barrier to clinic access. In addition, PWID in Ukraine and Vietnam talked about inflexible clinic hours, conflict with their working hours, and lines at MAT sites. Many PWID reported that MAT interfered with holding a full-time job.

I can only work on some minor jobs. I spend all the time in the morning for this [MAT]*, only afternoon is left. It is difficult - someone hires me to do some job nearby, then I try to take time to go; basically, I cannot do any job.* ***(PWID, male, 36 y.o., Vietnam)***

Providers across all sites talked about the same bureaucratic and structural barriers to initiation and retention in MAT. They reiterated PWID concerns about the need to visit the MAT site daily, its inconvenient location, and inflexible clinic hours.

MAT should be accessible, literally. A man from Vinogradar shouldn't have to go to somewhere in Svyatoshin - he should come to the clinic near his home and get his pills there, both ART and MAT. Going somewhere, you spend time and money. It all should be close to your place – same as a kindergarten or a school, MAT clinic should be nearby. ***(Counselor/SN, male, Ukraine)***

Financial barriers

Most PWID at all sites reported financial burden related with MAT initiation: costly procedures to enter MAT (numerous mandatory examinations) in Indonesia and Ukraine, costly medication (buprenorphine) in Indonesia and Vietnam, and a need to pay for transportation to the clinic and supporting services on-site (parking, cups, tests) in Vietnam.

I: Do you have to pay for Suboxone and the doctor? How much?

R: I pay 100,000 for the doctor, to buy the drugs, 50,000 per strip, Riclona 100,000 per strip, alprazolam 50,000 per strip… I should pay the doctor, then should buy the medicines. I am not a rich person, why don't I get a net price, not to bear this much! If the goal is to quit drugs, I don't think this is the way, because my friend can buy the drugs cheaper… ***(PWID, male, 23 y.o., Indonesia)***

Most providers in Indonesia and some in Ukraine and Vietnam also referred to costly procedures to start MAT (mandatory laboratory tests and other examinations) as a barrier for PWID who are often unemployed and have limited financial

resources. In Vietnam, where patients or their families have to pay for methadone, providers believed that such financial burden makes patients skip the doses, sometimes for weeks.

Lack of information about MAT

Some PWID in Indonesia and Ukraine mentioned lack of information on available substance use treatment, as well as lack of general understanding of MAT.

I: What methods of available substance use treatment do you know?

R: To be honest, I've been injecting for such a long time, I am supposed to know everything, and in the end I do not know anything. Well, I know that there is a detox, but maybe I cannot quite understand what it is... ***(PWID, female, 35 y.o., Ukraine)***

Providers across all sites saw the clients' lack of information about available treatment as a barrier to MAT initiation; they also noted general lack of understanding of addiction and MAT in society. A provider from Ukraine shared his concerns about negative image of addiction treatment institutions, rooted in the Soviet era.

Of course, for many of them [PWID], *it is very difficult to make a decision, because they do not know anything about available range of services they could get. For many, the image of drug treatment clinic since Soviet times is some punitive institution, where he will be tied to a bed and experience some incredible tortures…* ***(Narcologist, male, Ukraine)***

Negative opinion of methadone treatment

PWID across all sites expressed negative opinion of MAT and specifically of treatment with methadone. Such opinion was overwhelmingly pronounced in Ukraine where PWID associated methadone with lack of freedom and life-long treatment. Many Ukrainian and Vietnamese PWID considered methadone a free drug rather than medication - "*they substitute one drug with another*" ***(PWID, male, 39 y.o., Ukraine).*** Others, especially in Indonesia and Vietnam, believed that "*it is better to use drugs than methadone*" ***(PWID, male, 39 y.o., Vietnam)***. Most PWID in Ukraine would prefer buprenorphine to methadone due to beliefs that buprenorphine is less toxic and that quitting methadone was impossible once you started it.

MAT is like a double-edged sword. Some people think that MAT was invented to simply eliminate injecting drug users… A person who uses methadone for some time, especially methadone, - he turns into a vegetable, especially with high dosage. He only goes to MAT and back home, nothing else... ***(PWID, male, 33 y.o., Ukraine)***

Providers in Ukraine confirmed that PWID had misconceptions about methadone; they cited their patients who perceived methadone treatment as "*chemicals that destroy my body*" ***(Counselor/SN, female, Ukraine)***, "*point of no return"* and having "*one foot in a grave*" ***(Counselor/SN, male, Ukraine***). Both physicians and counselors in Ukraine believed that many PWID would join MAT if free buprenorphine was available.

Social stigma towards PWID

Across all sites, PWID talked about stigma and social devaluation of people who use drugs; in their opinion, such stigma was more common in community than at health care facilities. In addition, according to PWID in Indonesia and Vietnam, people in community do not differentiate between active drug users and MAT patients, so joining MAT means that you confirm that you are "drug user". Similarly, providers in Indonesia and Ukraine reported social stigma towards both PWID and addiction treatment.

*It turns out that if you are a drug addict, then in any case you are a thief, a villain, or something like that… (****PWID, male, 33 y.o., Ukraine****)*

Unlike other participants, one PWID in Vietnam recognized that people in his community were very supportive of his MAT initiation, "*Everyone is happy for me, they come and talk with me*" (***PWID, male, 36 y.o., Vietnam***). Such support motivated this

person to retain in treatment.

Other barriers related to drug use

Ukrainian PWID often talked about their drug dependence and drug use, which takes up all their time, saying they were so accustomed to a drug user's life. PWID in Ukraine and Vietnam also mentioned using other substances when on MAT, as a barrier to adherence.

*Basically, I would be happy not to use drugs, but 20 years of use – well, I've already forgotten how it is, (*to live*) without drugs...* ***(PWID, male, 37 y.o., Ukraine)***

I: So you took methadone for two years and left the program. Why do people quit MAT, what are their reasons?

R: They quit because they still "play" with drugs, and they think that using both drug and medication, they are not going to have craving anymore, but actually taking both, it is even more craving. It fights against each other; therefore, they have to quit methadone - it is better to use only drugs. ***(PWID, male, 39 y.o., Vietnam)***

In Ukraine, providers saw drug use related barriers somewhat differently: they believed that PWID "*cannot imagine life without drugs*" because they "*want to be under the influence*" ***(Counselor/SN, male, Ukraine).*** For them, drug dependence and lack of motivation for treatment were equivalent. Providers (but not PWID) in Ukraine felt that some PWID might not start addiction treatment because of "*lack of will*" (***ID physician, female, Ukraine***) and laziness; they perceived that PWID prioritized drug use over caring for their health and hence were less motivated to take up ART and MAT. In providers' opinion, PWID would initiate MAT only in a critical situation, "*When they are broke and have no money for the drugs, then they come to us*." ***(Narcologist, male, Ukraine)***

Problems with drug interactions

As the study participants were PWID living with HIV, some in Ukraine and Vietnam who were on ART explained their reluctance to start MAT by fear of interaction between ART and methadone.

R: While taking methadone, also taking ART, the medication is resistant.

I: What does it mean?

R: For example, I take the dose of 100 mg; it is reduced to 50 only. ***(PWID, male, 42 y.o., Vietnam)***

Facilitators

PWID and providers across all sites reported far fewer facilitators than barriers to substance use treatment uptake (Table 3). As in the case of barriers, PWID and providers across study sites described similar facilitators to initiate MAT.

Internal motivation for a life change

Internal motivation for a life change was the main facilitating factor for quitting drug use and starting MAT reported by PWID in Indonesia and Ukraine; they felt tired of drug use and expressed a will "*to live a normal life*" ***(PWID, male, 38 y.o., Indonesia)*** without drugs. Similarly, providers in Ukraine and Vietnam spoke about PWID being tired of a drug user's life, considering their internal will for a life change as a motivator to MAT initiation.

I: What was your personal reason to start MAT?

*R: First, I was already tired of such a life that I had (*laughs*). It is in the first place. I already wanted to change it, make it at least a little better. Plus, I want to have kids, I want to live a normal life. Not to exist, but to live a life.* ***(PWID, male, 42 y.o.,***

Vietnam)

Social support

According to PWID across all sites, social support, and particularly MAT information and motivation from peers and providers facilitated their treatment uptake. Support and opinion of friends/peers was important for PWID in Indonesia and Vietnam, as well as support (Indonesia) and even pressure (Ukraine) from the family.

*In my case, a pregnancy of my wife drove me to the drug treatment program. Also, I was curious about benefit of methadone because I heard a little from my friends. Finally, my family encouraged me to join [*MAT*]. I felt guilty looking at my wife and child who did not eat sufficiently. When I joined methadone, I realized that I could earn legal money for them.* ***(PWID, male, 36 y.o., Indonesia)***

Similarly, providers in Indonesia and Vietnam believed that MAT information and motivation from peers and providers was helpful, as well as information provided by local community-based organizations in Ukraine. Across all sites, providers considered the family influence important for PWID engagement in MAT.

Discussion

We explored factors that influence MAT uptake among PWID in Jakarta, Indonesia; Kyiv, Ukraine; and Thai Nguyen, Vietnam. The unique features of this study are that our participants were PWID living with HIV, the compared opinions between PWID (HPTN 074 participants) and health care providers, and the cross-cultural nature of this study. We found that despite different cultures and health care systems, there was a significant overlap of reported barriers and facilitators to engagement in MAT across the study countries.

Overall, both PWID and health care providers at all sites reported similar organizational and structural barriers to MAT initiation and retention. Among them, complicated entry to MAT program (limited treatment slots, complicated admission requirements) and problematic clinic access (distance to the clinics, inflexible clinic hours) were repeatedly mentioned. To improve MAT accessibility, it is necessary to set flexible inclusion criteria to ensure PWID immediate access to treatment and eliminate waiting lists [42]. Previously it has been documented that rigid control associated with MAT delivery is a predictor of treatment interruption [43]. In addition, restrictive MAT practices obstruct the improvement of social functioning of MAT patients and their return to a desired ‘normal life”. Given the vast access barriers in Vietnam and Indonesia, policy makers might look for alternative approaches to current drug treatment models in the countries with limited resources, rather than translating the models for developed countries. Low-threshold MAT services (geographical accessibility, patient-friendly clinic hours, and flexible models of MAT distribution), reported as facilitators by providers in our study, are strongly recommended to encourage drug treatment entry and retention.

Financial barriers to MAT were apparent at all sites, related both to MAT initiation and maintenance, but there may have been financial barriers of different intensity. For instance, in Indonesia and Ukraine, PWID talked about costly examinations and required donations to enter MAT, while transportation to MAT site entailed specific expenses in Vietnam and Indonesia. It was shown in our study and elsewhere [44], that long daily trips and rigid clinic hours prevent MAT patients from holding a stable job. For MAT sites, one recommendation is to develop a checklist to ask clients about potential financial barriers and to develop strategies to address these barriers. On the structural level, expanding prescription MAT and take-home doses, which are a known predictor of retention in MAT programs [27], is highly recommended for stabilized patients. This will enable clinics to serve more individuals, to address the problems of long and costly transportation and of incompatibility of MAT with employment and other meaningful activities [43]. Availability of take-home doses is recommended for all countries to diminish patients’ financial burden of everyday trips to the clinic, as well as to ensure higher treatment retention.

Insufficient coverage with MAT in all three countries is a pressing issue. Decentralization of MAT services and their integration in primary care, as well as its availability at HIV and TB treatment sites, is another potential solution.

Social stigma towards PWID (including MAT patients) reported by both PWID and providers in our study had been previously described in the study countries (Vietnam, Ukraine) and beyond [22, 45]. Similar to our findings, in Vietnam, Tran et al. [22] found that stigma towards PWID was significantly higher in the community than at health care settings. Our data indicate the need for informational campaigns and community-level interventions to change societal attitudes and counter stigma associated with addiction and MAT (especially with methadone) in all three countries and to ensure community support for those PWID who plan to initiate MAT.

Individual-level barriers reported by the study participants included PWID' lack of information on existing MAT services, drug use-related barriers to health care, and prejudices and negative attitudes to MAT, especially to treatment with methadone.

In the study of the interdependence of the barriers to MAT among PWID who had never received MAT in Ukraine, Zelenev et al. [46] concluded that in the hierarchy of barriers, the perceptions about MAT efficacy and its negative impact on health were the most widespread, followed by structural barriers and social stigma. In our study and elsewhere [44], limited knowledge and negative attitudes to methadone therapy have been reported as significant obstacles for MAT initiation and retention among study participants. Such negative attitudes may cause another financial burden by buprenorphine preferred by many PWID, as methadone is free for patients in all countries. Because PWID' positive or negative attitudes and prejudices around MAT might be reinforced through their social interactions, utilizing drug users' networks to deliver information about MAT may be an effective strategy to address both misconceptions of methadone and lack of information about drug treatment services. MAT patients could be trained to effectively communicate the value of MAT in their social circle and address myths surrounding drug treatment. Such peer-delivered interventions could also ensure social support shown in our study to be one of the main facilitators for substance use treatment.

Patient and provider communication about MAT treatment goals may reduce patient frustration, uncertainty, and fears of "life-long treatment." In our study, PWID did not mention their problematic relationship with providers. However, lack of realistic information about drug treatment even in PWID with MAT experience shows evident gaps in patient-provider communication. Improving such communication is important to provide social support to the patients, debunk the myth of the dangers of methadone, explain drug interaction and ensure that methadone dosage is sufficient, especially for people on ART.

One strength of our study is that it shows unique barriers inherent to PWID living with HIV, such as fear of ART and MAT interaction. Information about drug interaction and side effects should be a part of health promotion interventions for PWID in the countries with high HIV prevalence in PWID. In addition, these findings emphasize the need for such interventions to be tailored to the specific needs of PWID living with HIV, who might face challenges in taking both therapies.

While most individual and structural barriers were reported by both PWID and providers, there were some differences: PWID talked about fear of drug (MAT and ART) interactions, while providers emphasized PWID prioritization of drug use over caring about health. At the same time, different from the findings of other studies in Ukraine [37, 18, 47], in our study neither PWID nor providers mentioned police violence or fear of official registration at narcology registry as a barrier to MAT uptake. Similarly, participants did not mention MAT doses as a barrier to treatment. These omissions may be related to changes in legislation regarding dosage and with police reform in the country.

Social support and motivation for a life change were recognized by both PWID and providers as facilitators to MAT uptake. Given that substantial barriers for MAT treatment entry and retention were observed in all three countries, social support from family and health care providers may help to maintain drug treatment motivation when faced with treatment barriers. The HPTN 074 experimental intervention included a session with "a supporter" to strengthen participants' family support, but was focused on ART initiation. As we found that family support and family well-being were among the main motivators for the life change, this approach could be expanded to substance use treatment. However, as many potential supporters may lack basic information about drug dependence, such programs should also include an educational component.

To embed MAT in their lives, PWID must believe that such treatment would be effective rather than harmful. There is a considerable need to improve the image of MAT programs by introducing effective social marketing campaigns for PWID and community. Still, future research is needed on potential sources of support for MAT within the social networks of PWID and to identify trustworthy and reliable sources of information on substance use treatment. Public health professionals and policymakers need to be aware of the barrier to MAT experienced by PWID. Being unaware of the documented barriers, these stakeholders may continue attribute MAT drop out to lack of motivation and hence fail to address the critical obstacles to MAT. MAT providers should also examine how program requirements may add additional barriers that cause challenges, especially for impoverished individuals, many of whom are in poor health condition.

Limitations

As described, the structure of drug treatment varies between the countries, hence different approaches may be needed to achieve similar solutions. While the multi-site nature of this qualitative study is one of its strengths, it limits making general conclusions and recommendations. In addition, data were collected in multiple languages and then translated into English for analysis (Go et al., 2019). Although quality assurance/quality control procedures were used to minimize translation errors, some quality of the transcripts could be lost in translation. At the same time, as the interview guide was standardized and pilot tested for cultural appropriateness across all sites, our approach allowed different patterns to emerge allowing for within- and cross-country comparisons.

Conclusions

Overall, both PWID and providers reported similar and multi-level barriers to MAT uptake in all three countries where insufficient coverage with MAT is a pressing issue.

While we aimed to explore barriers to MAT initiation, PWID participants spoke about barriers that PWID might face both prior to, and also during, their MAT treatment, such as distance to the MAT site, inability to maintain a job, expenses at the MAT site, and stigma in community. These results highlight a need for support for PWID at each stage of the drug treatment, including both initiation and retention in care. To expand MAT, it is necessary to ensure low-threshold, financially affordable MAT programs.

Negative personal beliefs and attitudes, coupled with structural barriers to MAT uptake, indicate a need for a review of existing practices, development of novel interventions for PWID, and delivery of marketing campaigns that can counter misinformation in community associated with drug dependence and MAT in all study countries. Future research should examine the sources and perceived trustworthiness of information on MAT from social media, peers, and social marketing. This information could be used to develop programs to not only promote MAT but also to address the negative misinformation about MAT. Furnishing drug treatment programs with feedback about barriers to drug treatment may help facilitate organizational problem solving to address these barriers.

Abbreviations

MAT: medication-assisted treatment; HIV: human immunodeficiency virus; PWID: people who inject drugs; ART: antiretroviral therapy; NSP: needle and syringe program; MoH: Ministry of Health; SN: system navigator.

Declarations

Acknowledgements

The authors would like to thank all the study participants and all the research coordinators and interviewers, as well as the outreach community workers at all the study sites, who made the data collection possible.

Authors' contributions

TK: Conceptualization, Data analysis, Original draft preparation. VFG: Conceptualization, Methodology, Supervision of data analysis, Writing - Reviewing and Editing. RBH: Data analysis, Methodology, Writing - Reviewing and Editing. RS: Writing of the Methods section, Reviewing and Editing. QB: Writing of the Methods section, Reviewing and Editing. ELH: Supervision, Reviewing and Editing. KEL: Conceptualization, Reviewing and Editing. KD: Reviewing and Editing, Supervision. IFH: Reviewing and Editing, Supervision. WCM: Conceptualization, Reviewing and Editing, Supervision. CAL: Conceptualization, Reviewing and Editing, Supervision. All authors reviewed the final version of the manuscript and approved it for publication.

Ethics approval and consent to participate

The study protocol (available at https://clinicaltrials.gov/ct2/show/NCT02935296) was approved by the following institutional review boards: Institutional Review Board of Ukrainian Institute on Public Health Policy (Ukraine); Ethical Review Board for Biomedical Research Hanoi School of Public Health (Vietnam); Ethics Committee of Faculty of Medicine, University of Indonesia/ Cipto Mangunkusumo Hospital (Indonesia); and the University of North Carolina Institutional Review Board. All participants provided written informed consent to participate in the qualitative interview as a part of the HPTN 074 trial.

Funding

This work was supported by the National Institute of Allergy and Infectious Diseases (NIAID), the National Institute of Mental Health (NIMH), and the National Institute on Drug Abuse (NIDA) of the National Institutes of Health (NIH); award numbers UM1AI068619 [HPTN Leadership and Operations Center], UM1AI068617 [HPTN Statistical and Data Management Center], UM1AI068613 [HPTN Laboratory Center], and the University of North Carolina at Chapel Hill Center for AIDS Research (P30 AI50410).

Availability of data and materials

The data collected and analyzed during this study are not publicly available due to confidentiality reasons. However, de-identified transcripts might be available from the corresponding author and PI of the study (William C. Miller) upon reasonable request.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

References

1. Reid G, Sharma M, Higgs P. The long winding road of opioid substitution therapy implementation in South East Asia: challenges to scale up. J Public Health Res. 2014 Mar 26;3(1):204. doi: 10.4081/jphr.2014.204.
2. UNAIDS. The Gap Report: Joint United Nations Programme on HIV/AIDS, 2014. http://files.unaids.org/en/media/unaids/contentassets/documents/unaidspublication/2014/UNAIDS_Gap_report_en.pdf Accessed 02 July 2020.

3. Wood E, Montaner JS, Yip B, Tyndall MW, Schechter MT, O'Shaughnessy MV, et al. Adherence and plasma HIV RNA responses to highly active antiretroviral therapy among HIV-1 infected injection drug users. CMAJ. 2003;169(7):656–61.
4. Moore RD, Keruly JC, Chaisson RE. Differences in HIV disease progression by injecting drug use in HIV-infected persons in care. JAIDS. 2004;35(1):46–51.
5. De Maeyer J, van Nieuwenhuizen C, Bongers IL, Broekaert E, Vanderplasschen W. Profiles of quality of life in opiate-dependent individuals after starting methadone treatment: A latent class analysis. Int J Drug Policy. 2013;24(4):342–50.
6. Tran BX, Nguyen L. Impact of methadone maintenance on health utility, health care utilization and expenditure in drug users with HIV/AIDS. Int J Drug Policy. 2013;24:e105-e110.
7. Lawrinson P, Ali R, Buavirat A, Chiamwongpaet S, Dvoryak S, Habrat B, et al. Key findings from the WHO collaborative study on substitution therapy for opioid dependence and HIV/AIDS. Addiction. 2008;103(9):1484-92.
8. Dennis BB, Naji L, Bawor M, Bonner A, Varenbut M, Daiter J, et al. The effectiveness of opioid substitution treatments for patients with opioid dependence: a systematic review and multiple treatment comparison protocol. Systematic Reviews. 2014;19(3):105. doi:10.1186/2046-4053-3-105.
9. Dumchev K, Dvoryak S, Chernova O, Morozova O, Altice FL. Retention in medication-assisted treatment programs in Ukraine - identifying factors contributing to a continuing HIV epidemic. Int J Drug Policy. 2017;48:44-53.
10. Gardner LI, Marks G, Strathdee SA, Loughlin AM, Del Rio C, Kerndt P, et al. Faster entry into HIV care among HIV-infected drug users who had been in drug-use treatment programs. Drug Alcohol Depend. 2016;165:15-21.
11. Altice FL, Bruce RD, Lucas GM, Lum PJ, Korthuis PT, Flanigan TP, et al; BHIVES Collaborative. HIV treatment outcomes among HIV-infected, opioid-dependent patients receiving buprenorphine/naloxone treatment within HIV clinical care settings: results from a multisite study. JAIDS. 2011;56(Suppl 1):S22–32. doi:10.1097/QAI.0b013e318209751e
12. Malta M, Magnanini MM, Strathdee SA, Bastos FI. Adherence to antiretro-viral therapy among HIV-infected drug users: a meta-analysis. AIDS Behav. 2010;14:731–47.
13. Low AJ, Mburu G, Welton NJ, May MT, Davies CF, French C, et al. Impact of opioid substitution therapy on antiretroviral therapy outcomes: a systematic review and meta-analysis. Clin Infect Dis. 2016;63(8):1094–104.
14. Reddon H, Milloy M-J, Simo A, Montaner J, Wood E, Kerr T. Methadone maintenance therapy decreases the rate of antiretroviral therapy discontinuation among HIV-positive illicit drug users. AIDS Behav. 2014;18:740–46.
15. Roux P, Carrieri MP, Cohen J, Ravaux I, Poizot-Martin I, Dellamonica P, Spire B. Retention in opioid substitution treatment: a major predictor of long-term virological success for HIV-infected injection drug users receiving antiretroviral treatment. Clin Infect Dis. 2009;49(9):1433-40.
16. Larney S, Peacock A, Leung J, Colledge S, Hickman M, Vickerman P, et al. Global, regional, and country-level coverage of interventions to prevent and manage HIV and hepatitis C among people who inject drugs: a systematic review. Lancet Glob Health. 2017;5(12):e1208-e1220.
17. Degenhardt L, Peacock A, Colledge S, Leung J, Grebely J, Vickerman P, et al. Global prevalence of injecting drug use and sociodemographic characteristics and prevalence of HIV, HBV, and HCV in people who inject drugs: a multistage systematic review. Lancet Glob Health. 2017;5(12):e1192-e1207.
18. Bojko MJ, Mazhnaya A, Makarenko I, Marcus R, Dvoriak S, Islam Z, et al. "Bureaucracy & beliefs": assessing the barriers to accessing opioid substitution therapy by people who inject drugs in Ukraine. Drugs (Abingdon Engl). 2015;22(3):255-62.
19. Bojko MJ, Mazhnaya A, Marcus R, Makarenko I, Fillipovich S, Islam Z, et al. The future of opioid agonist therapies in Ukraine: a qualitative assessment of multilevel barriers and ways forward to promote retention in treatment. J Subst Abuse Treat. 2016;66:37–47.
20. Lin C, Wu Z, Detels R. Opiate users' perceived barriers against attending methadone maintenance therapy: A qualitative study in China. Subst Use Misuse. 2011;46:1190–8.
21. Wolfe D, Carrieri MP, Shepard D. Treatment and care for injecting drug users with HIV infection: a review of barriers and ways forward. Lancet. 2010;376(9738):355-66.

22. Tran BX, Vu PB, Nguyen LH, Latkin SK, Nguyen CT, Phan HTT, et al. Drug addiction stigma in relation to methadone maintenance treatment by different service delivery models in Vietnam. BMC Public Health. 2016 Mar 8;16:238. doi: 10.1186/s12889-016-2897-0.
23. Van Nguyen H, Nguyen HL, Mai HT, Le HQ, Tran BX, Hoang CD, et al. Stigmatization among methadone maintenance treatment patients in mountainous areas in northern Vietnam. Harm Reduct J. 2017 Jan 6;14(1):1. doi: 10.1186/s12954-016-0127-9.
24. Makarenko I, Mazhnaya A, Polonsky M, Marcus R, Bojko MJ, Filippovych S, et al. Determinants of willingness to enroll in opioid agonist treatment among opioid dependent people who inject drugs in Ukraine. Drug Alcohol Depend. 2016;165:213-20.
25. Tran BX, Nguyen LH, Phan HT, Nguyen LK, Latkin CA. Preference of methadone maintenance patients for the integrative and decentralized service delivery models in Vietnam. 2015 Sep 17;12:29. doi: 10.1186/s12954-015-0063-0.
26. Callon C, Wood E, Marsh D, Li K, Montaner J, Kerr T. Barriers and facilitators to methadone maintenance therapy use among illicit opiate injection drug users in Vancouver. J Opioid Manag. Jan-Feb 2006;2(1):35-41.
27. Sarasvita R, Tonkin A, Utomo B, Ali R. Predictive factors for treatment retention in methadone programs in Indonesia. J Subst Abuse Treat. 2012;42(3):239-46.
28. Kamarulzaman A, Altice FL. Challenges in managing HIV in people who use drugs. Curr Opin Infect Dis. 2015;28(1):10-16.
29. Miller WC, Hoffman IF, Hanscom BS, Ha TV, Dumchev K, Djoerban Z, et al. A scalable, integrated intervention to engage people who inject drugs in HIV care and medication-assisted treatment (HPTN 074): a randomized, controlled phase 3 feasibility and efficacy study. Lancet. 2018;392(10149):747-59.
30. Go VF, Hershow RB, Kiriazova T, Sarasvita R, Bui Q, Latkin CA, et al. Client and provider perspectives on antiretroviral treatment uptake and adherence among people who inject drugs in Indonesia, Ukraine and Vietnam: HPTN 074. AIDS Behav. 2019;23(4):1084-93.
31. Lancaster KE, Miller WC, Kiriazova T, Sarasvita R, Bui Q, Ha TV, et al. Designing an individually tailored multilevel intervention to increase engagement in HIV and substance use treatment among people who inject drugs with HIV: HPTN 074. AIDS Educ Prev. 2019;31(2):95-110.
32. Ministry of Health Republic of Indonesia. Regulation No. 55 of 2015 on “harm reduction of people who inject drugs”. July 29, 2015. (In Indonesian).http://ditjenpp.kemenkumham.go.id/arsip/bn/2015/bn1238-2015.pdf Accessed 02 July 2020.
33. Wulansari W, Rahmaniati Makful M. Why is the Number of Patients of Methadone Maintenance Therapy in Indonesia Stagnant? Improvement of Service. KnE Life Sciences. 2019;4(10):136–43.
34. Sugarman J, Barnes M, Rose S, Dumchev K, Sarasvita R, Viet HT, et al. Development and implementation of participant safety plans for international research with stigmatized populations. Lancet HIV. 2018; 5(8):e468-e472.
35. Zaller N, Mazhnaya A, Larney S, Islam Z, Shost A, Prokhorova T, et al. Geographic variability in HIV and injection drug use in Ukraine: implications for integration and expansion of drug treatment and HIV care. Drug Alcohol Depend. 2015;26(1):37-42.
36. Public Health Center of the Ministry of Health of Ukraine. OST statistics. https://www.phc.org.ua/kontrol-zakhvoryuvan/zalezhnist-vid-psikhoaktivnikh-rechovin/zamisna-pidtrimuvalna-terapiya-zpt/statistika-zpt Accessed 02 July 2020.
37. Izenberg JM, Bachireddy C, Soule M, Kiriazova T, Dvoryak S, Altice FL. High rates of police detention among recently released HIV-infected prisoners in Ukraine: implications for health outcomes. Drug Alcohol Depend. 2013;133(1):154-60.
38. Ministry of Health of Ukraine (2016). Order of 17.12.2015 No 863 On amendments to the Order of the Ministry of Health of Ukraine of 27.03.2012 № 200 “On approval of the procedure of substitution maintenance therapy for patients with opioid dependence”. (In Ukrainian). https://zakon.rada.gov.ua/laws/show/z0045-16#n21 Accessed 02 July 2020.
39. Johns B, Chau LB, Hanh KH, Manh PD, Do HM, Duong AT, Nguyen LH. Association between user fees and dropout from methadone maintenance therapy: results of a cohort study in Vietnam. Health Systems & Reform, 2018;4(2):101-13.

40. Ministry of Health of Vietnam, 2018. (In Vietnamese). http://vaac.gov.vn/solieu/Detail/Bao-cao-tinh-hinh-dieu-tri-Methadone-den-giua-thang-3-nam-2016 Accessed 02 July 2020.
41. Miles MB, Huberman AM. Matrix displays: Some rules of thumb qualitative data analysis. Thousand Oaks, CA: Sage, 1994, pp.239–244.
42. Kourounis G, Richards BD, Kyprianou E, Symeonidou E, Malliori MM, Samartzis L. Opioid substitution therapy: Lowering the treatment thresholds. Drug Alcohol Depend. 2016;61:1-8.
43. Rozanova J, Marcus R, Taxman FS, Bojko MJ, Madden L, Farnum SO, et al. Why people who inject drugs voluntarily transition off methadone in Ukraine. Qual Health Res. 2017;27(13):2057-70.
44. Nguyen TT, Luong AN, Nham TTT, Chauvin C, Feelemyer J, Nagot N, et al. Struggling to achieve a 'normal life': A qualitative study of Vietnamese methadone patients. Int J Drug Policy. 2019;68:18-26.
45. Mazhnaya A, Marcus R, Bojko MJ, Zelenev A, Makarenko I, Pykalo I, et al. Opioid agonist treatment and improved outcomes at each stage of the HIV treatment cascade in people who inject drugs in Ukraine. 2018;79(3):288-95.
46. Zelenev A, Shea P, Mazhnaya A, Rozanova J, Madden L, Marcus R, et al. Assessment of barrier severity and willingness to enter opioid agonist treatment among people who inject drugs in Ukraine. Drug Alcohol Depend. 2018;190:82-8.
47. Kutsa O, Marcus R, Bojko MJ, Zelenev A, Mazhnaya A, Dvoriak S, et al. Factors associated with physical and sexual violence by police among people who inject drugs in Ukraine: implications for retention on opioid agonist therapy. JIAS. 2016;19(4 Suppl 3):20897. doi: 10.7448/IAS.19.4.20897

Tables

Table 1. Socio-demographic characteristics of the interview participants (n=62)

Characteristic	Total n (%)	Indonesia n (%)	Ukraine n (%)	Vietnam n (%)
PWID	**(n=37)**	**(n=7)**	**(n=15)**	**(n=15)**
Gender				
Male	32 (86.5)	7 (100.0)	10 (66.7)	15 (100.0)
Female	5 (13.5)	0 (0.0)	5 (33.3)	0 (0.0)
Median age (years)	35	36	33	37
Highest education completed				
Primary school	5 (13.5)	2 (28.6)	0 (0.0)	3 (20.0)
Secondary school	7 (18.9)	1 (14.3)	0 (0.0)	6 (40.0)
High school	19 (51.4)	2 (28.6)	12 (80.0)	5 (33.3)
University/College	6 (16.2)	2 (28.6)	3 (20.0)	1 (6.7)
Employment status				
Employed	18 (48.6)	3 (42.9)	6 (40.0)	9 (60.0)
Unemployed	19 (51.4)	4 (57.1)	9 (60.0)	6 (40.0)
Median length of drug use (years)	14	13	15	13
Currently on MAT	20 (54.0)	6 (85.7)	5 (33.3)	9 (60.0)
Providers	**(n=25)**	**(n=10)**	**(n=8)**	**(n=7)**
Role in clinic				
Clinician	17 (68.0)	8 (80.0)	4 (50.0)	5 (71.4)
Counselor/Systems Navigator	8 (32.0)	2 (20.0)	4 (50.0)	2 (28.6)
Gender				
Male	14 (56.0)	5 (50.0)	6 (75.0)	3 (42.9)
Female	11 (44.0)	5 (50.0)	2 (25.0)	4 (57.1)
Median age (years)	42.0	43.5	31.0	51.0
Highest education completed				
High School/Diploma	4 (16.0)	3 (30.0)	1 (12.5)	0 (0.0)
University/College	13 (52.0)	3 (30.0)	6 (75.0)	4 (57.1)
Master/Doctor/PhD	8 (32.0)	4 (40.0)	1 (12.5)	3 (42.9)
Median length of time in role (years)	5*	12	3.5	4.5*

*Missing: n=1.

Table 2. Barriers to substance use treatment: key themes

Themes	PWID	Providers
Complicated entry to MAT program	All sites: limited number of treatment slots; waiting lists. Vietnam and Indonesia: procedural barriers; strict admission requirements.	Vietnam: low capacity of MAT sites to accept new patients. Indonesia, Vietnam: strict admission requirements to start MAT.
Problematic clinic access	Majority in Vietnam, some in Indonesia: long distance to MAT clinic. Ukraine, Vietnam: inflexible clinic hours; lines at MAT sites.	All sites: long distance to MAT clinic; limited/inflexible clinic hours. Indonesia, Ukraine: daily visits to MAT site.
Financial barriers	Costly examinations to start MAT (Indonesia, Ukraine); a need to pay for transportation and supporting services at MAT site (Vietnam).	Most providers in Indonesia and a few in Ukraine and Vietnam: costly examinations to start MAT. Vietnam: a need to pay for MAT leads to patients skipping doses.
Social stigma towards PWID	All sites: stigma towards PWID in the community rather than at health facilities. Vietnam: social stigma towards methadone clients.	Indonesia, Ukraine: social stigma towards PWID. Ukraine: stigmatization of addiction treatment per se; negative image of narcology institutions.
Lack of information about substance use treatment	Indonesia, Ukraine: lack of information about available substance use treatment.	All sites: PWID's lack of information about available substance use treatment; lack of understanding of addiction and MAT in society.
Negative opinion of methadone treatment	All sites - misconceptions of methadone: it is "drug given for free" (Ukraine, Vietnam) and "worse than street drugs" (Indonesia, Vietnam). Ukraine: PWID would prefer buprenorphine.	Ukraine: misconceptions and negative opinions of methadone among PWID; PWID would prefer buprenorphine. Some providers see MAT as a free substitution to a street drug.
Other barriers related to drug use	Ukraine: most PWID are used to the drug user's lifestyle. Ukraine, Vietnam: using other substances when on MAT as a barrier to adherence.	Ukraine: PWID do not start MAT as they prefer a "drug user's life" and demonstrate "lack of will" (lack of internal motivation).
Drug interactions	Ukraine, Vietnam: fear of ART and methadone interaction.	

Table 3. Facilitators to substance use treatment: key themes

Themes	PWID	Providers
Internal motivation for a life change	Indonesia, Ukraine: being tired of using drugs; a will for a life change.	Ukraine, Vietnam: being tired of a drug user's life; a will for a life change.
Social support	All sites: MAT information / motivation from peers and providers. Indonesia, Vietnam: support from peers; support (Indonesia) and pressure (Ukraine) from the family.	MAT information / motivation from peers and providers (Indonesia and Vietnam) and from local HIV-servicing CBOs (Ukraine). All sites: family support of MAT initiation and adherence.