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Ukrainian prisoners and community reentry challenges: implications for transitional care

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Abstract

Purpose—The study aims to assess reentry challenges faced by Ukrainian prisoners and to determine the factors associated with having a greater number of challenges in order to suggest pre- and post-release interventions with the aim of facilitating community reintegration.

Design/methodology/approach—A representative national cross-sectional study with a sample size of 402 prisoners was conducted among imprisoned adults within six months of release. The study consisted of interviews and biological testing for infectious diseases. Anticipated reentry challenges were assessed using a structured questionnaire.

Findings—The most difficult and relatively important challenges identified were finding a job or a stable source of income and staying out of prison following release. Risk-specific challenges pertinent to drug users and HIV-infected individuals were assessed as difficult, but generally less important. Similarly, challenges associated with reducing drug relapse were ranked as less important, with only 0.6 percent identifying opioid substitution therapy as a helpful measure. In the multivariate analysis, having a greater number of challenges is associated with previous incarcerations, drug use immediately before incarceration and lower levels of social support.

Practical implications—To facilitate community re-integration, it is vital to design interventions aimed at reducing recidivism and improvement of social support through comprehensive case management as well as to improve understanding about and address drug dependence issues among inmates by implementing evidence-based treatment both within prisons and after release.

Originality/value—This is the first comprehensive assessment of community reentry challenges by prisoners in the former Soviet Union.

Keywords

Prisoners; Drug use; HIV; AIDS; Ukraine; Community reentry; Recidivism; Social support; Communities

Introduction

Ukraine has one of the most volatile HIV epidemics in Eastern Europe and Central Asia (UNAIDS, 2010) with an estimated HIV prevalence of 0.58 percent among adults (Ministry of Health of Ukraine *et al.*, 2012). Unlike the epidemic in Africa where HIV is primarily a generalized epidemic, the epidemic in Eastern Europe and Central Asia is concentrated primarily among people who inject drugs (PWIDs) (UNAIDS/WHO, 2009). By 2007, though, there became evidence of a transitional HIV epidemic with increasing sexual transmission associated with sexually transmitted infections (STIs) (UNAIDS, 2009), suggesting a bridge to the general population. Among the estimated 278,000–387,000 injection drug uses (IDUs) in Ukraine (Ministry of Health of Ukraine *et al.*, 2012), HIV prevalence is estimated to be 32 percent according to sentinel surveillance (Taran *et al.*, 2011) and hepatitis C prevalence is estimated to be as high as 73 percent among PWIDs (Dumchev *et al.*, 2009).

Due to the incarceration of PWIDs for crimes affiliated with heightened HIV risk, problems related to drug use and HIV are especially concentrated within the criminal justice system (Altice *et al.*, 1998; Dolan *et al.*, 2007; Beyrer *et al.*, 2003; Werb *et al.*, 2008). Ukraine imprisons 336 per 100,000 population (International Center for Prison Studies, 2012) with 14.3 percent of sentences being directly related to narcotics (Ukrainian State Penitentiary Service, 2012). Statistics on drug use and HIV among prisoners have been hampered by variability in survey methods, but self-reported prevalence previously suggested that 30–35 percent were PWIDs (Dolan *et al.*, 2007; Demchenko *et al.*, 2010). While only 6,347 (4.9 percent) of the 130,099 prisoners are officially registered as HIV-infected in Ukraine as of July 2012 (Ukrainian State Penitentiary Service, 2012), other estimates suggest HIV prevalence is 7.75 percent (Kruglov *et al.*, 2008) to 15.0 percent (Demchenko *et al.*, 2010). Only 1,083 (17.1 percent) of registered HIV-infected prisoners are prescribed antiretroviral therapy (ART) (Ukrainian State Penitentiary Service, 2012).

Prisoners transitioning to the community experience profoundly negative health consequences (Gaes *et al.*, 1999; Visher and Farrell, 2005; Council of State Governments, 2003), including recidivism (Levasseur *et al.*, 2002; Langan and Levin, 2002), high rates of overdose and death (Binswanger *et al.*, 2007; Rosen *et al.*, 2008), relapse to drug and alcohol use (Belenko, 2006; Kinlock *et al.*, 2002; Wexler *et al.*, 1990; Nurco *et al.*, 1991), discontinuation of medication (Baillargeon *et al.*, 2009), lack of control of chronic medical and psychiatric conditions (Springer *et al.*, 2011), and engagement in high risk behaviors that facilitate transmission of HIV, blood-borne infections and STIs (Milloy *et al.*, 2008; Stephenson *et al.*, 2006; Werb *et al.*, 2008). It is therefore vital for public health to create the necessary conditions for the timely diagnosis and adequate medical treatment of inmates, as well as to understand the key challenges faced by prisoners upon release and the factors

associated with an increased number of challenges. Understanding the circumstances confronted by prisoners upon release will aid in the design of pre and post-release interventions aimed at building a link between the prison and community settings in order to facilitate re-integration, and ultimately reduce recidivism and decrease risk behaviors thereby curbing the spread of disease.

Methods and data analysis

Study design

The recruitment and study design for the parent study has been previously described (Azbel *et al.*, 2013). A representative national, cross-sectional study was conducted among imprisoned adults within six months of release from Ukrainian prisons. Representation, based on a random stratified sampling methodology (Hunt and Tyrrell, 2001) included a broad array of Ukrainian correctional facilities that represented the overwhelming majority of the 130,000 prisoners from all four regions (Central, South, East, West) of the country: medium-security male and female sites, recidivist and first-time offenders. Sample characteristics of the 402 inmates are presented in Table I. Respondents were recruited from May to November 2011, and were enrolled if they were:

- 18 years of age or older;
- within six months of scheduled release date;
- able to provide informed consent; and
- could read and speak Russian or Ukrainian language.

After informed consent, a 45-minute audio computer-assisted structured interview (ACASI) assessed:

- demographic characteristics;
- criminal justice history;
- social circumstances prior to incarceration;
- pre-incarceration substance use;
- sexual and drug risk behaviors prior to incarceration;
- social support (Sherbourne and Stewart, 1991); and
- reentry challenges and likelihood of recidivism.

A comprehensive list of reentry challenges was constructed based on previous literature and focus groups using a four-point Likert scale (Choi *et al.*, 2010; Springer *et al.*, 2011). All instruments were translated and back translated into both Russian and Ukrainian (Ware *et al.*, 1995). Participants then underwent required pre-test HIV counseling, phlebotomy and testing for HIV, hepatitis C virus (HCV), hepatitis B virus (HBV) and syphilis. Those with confirmed HIV underwent reflex CD4 testing. All participants were provided counseling and referral for treatment if they tested positive for any infectious disease. A comprehensive list of post-release services was provided for each study participant.

Data analysis

Statistical analyses were performed using SPSS software for Windows (version 19.0, Chicago, Illinois). Characteristics of study subjects (Table I) were analyzed as categorical variables and collapsed where small frequencies in certain categories were observed. In the distribution of education attained, the category “Lower secondary, primary or no education” merges 15 cases of primary or no education and 82 cases of lower secondary; and the category “Professional technical/less than three years of college or higher” merges 90 cases of professional technical or less than three years in college and 34 cases of completed college or higher. Monthly income prior to incarceration is divided into three categories: no income, income of less than 1,776 UAH, and higher. Monthly income of 1,776 UAH per month is a legally set minimum cost of living in Ukraine at the time of the study. Opioid substitution treatment is provided in Ukraine with either methadone or buprenorphine.

The social support total scale and sub-scales ranged from 1 to 5 (Sherbourne and Stewart, 1991), and were divided into three categories: low (lowest quartile), middle (50 percent interquartile range) and high (highest quartile). Part of ACASI data for ten study participants was lost, therefore distribution of the social support categories do not sum up to 100 percent. In further analysis, only the total social support scale was used, as sub-scales did not present any additional findings compared to the total scale. A group of drug users was defined as those having a history of either injecting or opioid drug use. Active drug users refer to study participants reporting drug use 30 days prior to incarceration.

For a list of reentry challenges, the percentage of participants reporting a challenge, the percentage who identified a challenge as “hard” or “very hard”, and the percentage of participants identifying a particular challenge as most important relative to other challenges are shown in Figure 1 (non-specific challenges) and Figure 2 (risk-specific challenges pertinent to drug users and HIV-infected individuals). In the study, we discussed other challenges faced by people immediately after release and included them in the analysis. Additional challenges reported but not shown in Figures 1 and 2 include: getting more education, getting financial support from family or friends, getting custody of children, getting access to a stable source of food, finding a temporary place to sleep the first night after release, getting financial support from a sexual partner, getting help for emotional problems, and reuniting with a partner. For further analysis, a dichotomous variable was built with the options “hard” and “very hard” combined under “difficult” and options “easy” and “very easy” combined under “easy”.

The association between characteristics of study subjects (independent variables) and the share of participants identifying a challenge as difficult was assessed using the χ^2 -test or the Fisher exact test, as appropriate (Table II). Getting access to HIV care (a challenge) and a history of ART prescription (independent variable) were excluded from this type of analysis due to a small number of observations. Some of the characteristics listed in Table I are not included in the association analysis (Table II) either because of a high correlation with one or more of the independent variables included in the analysis or because they did not show any significant differences in terms of challenges.

A multiple linear regression was built to test the association between independent variables (characteristics of study participants) and facing a greater number of challenges. The dependent variable of the regression is the absolute number of challenges identified as difficult; the list of correlates includes those listed in Table II. Multiple linear regression coefficients are presented in Table III, which includes the independent variables, which showed significant association with the dependent variable.

Ethics statement

This study was approved by institutional review boards at Yale University and the Ukrainian Institute on Public Health Policy, and additional ethical oversight was obtained from the Office of Human Research Protections.

Results

Selected characteristics of study subjects are provided in Table I. In general, participants were equally distributed among the four regions, had a median age of 30.0 years, and over three quarters had attained a high level of education. Most participants were not married (74.1 percent) and were living below the Ukrainian level of poverty at the time of incarceration. As per our randomization criteria, about half (53 percent) had been previously incarcerated. Drug use, especially IDU, was prevalent in this sample with over a third reporting active IDU at the time of incarceration and only 4.5 percent ever having received opioid substitution therapy (OST).

Findings related to the burden of infectious diseases and substance use disorders among the study participants have been described in detail (Azbel *et al.*, 2013). Briefly, HIV screening showed 19.4 percent of the participants to be HIV-infected with a CD4 count ranging from 5 to 1,239 (mean=355 $\pm$ 251). Half of the HIV-infected individuals had not been previously informed of their status, and only eight individuals (10 percent of HIV-infected) were ever prescribed ART. In the group of drug users, the HIV prevalence was 26.5 percent. Hepatitis C prevalence among study subjects was 60.0 percent of which only 6.5 percent had been previously informed of their status.

The social support scale demonstrates relatively high levels of social support for the surveyed group, with a median of about three on the five-point scale for the total scale and sub-scales (Sherbourne and Stewart, 1991).

Figures 1 and 2 show the nine most commonly selected non-specific and risk-specific reentry challenges. The percentage of individuals reporting a challenge as applicable varies from 66 percent for “Getting methadone or buprenorphine treatment” to 98 percent for “Finding a permanent place to stay” and “Finding a job or a stable source of income”. In these figures, the indicator “Percentage of subjects identifying challenge as difficult” was calculated based on the whole sample, including those who considered a challenge to be not applicable to them. The last indicator shown in Figures 1 and 2 shows the importance of a challenge relative to other challenges (participants were asked to choose the most significant challenge).

Finding a job or a stable source of income was identified as both the most important and the hardest challenge. The second most important challenge, with a similar level of difficulty, was staying out of prison following release. A number of challenges were assessed as difficult while having a comparatively low level of importance: getting government income for disability, getting treatment for illnesses other than HIV, getting access to HIV care, getting help staying off drugs, and getting methadone or buprenorphine treatment. On the contrary, reuniting with family or friends and finding a permanent place to stay were ranked highly on the scale of relative importance but not considered to be difficult for the majority of respondents. Challenges considered being both of comparatively low importance and difficulty are not shown in Figures 1 and 2. Those are the following: getting financial support from family or friends, getting access to stable source of food, finding a safe place to sleep the night after release from prison, getting help for emotional problems, and reuniting with a sexual partner.

In terms of expected living situation on the day of release, the overwhelming majority (79.4 percent) named their own or their family's place; 1.7 percent said that they would be homeless. Over half (51 percent) expected that they would be able to stay in the specified place after release for most of the time or their entire life, a few months or a few years (27 percent), and a few days only (19 percent).

The same list of reentry challenges was presented to the participants asking about the tasks (all that apply), which would help him/her abstain from drug use after release. The order of importance was similar to the results shown in Figures 1 and 2. In the group of active drug users, 65.4 percent responded that finding a job or other stable source of income would help them abstain from drugs. Other items frequently named were reuniting with family or friends (20.4 percent), staying out of prison following release (19.8 percent), and getting help staying off drugs (14.8 percent). All other options were named by fewer than 10 percent of respondents in the group. Surprisingly, among active drug users, methadone or buprenorphine treatment was selected by only 0.6 percent (one respondent), and in the group of drug users the figure was similarly small (1.4 percent). Finally, 5.6 percent of study subjects in the group of active drug users reported that none of the above would help them abstain from drugs.

Bivariate associations between correlates and individual challenges are presented in Table II. Factors that are most frequently associated with significant differences for a number of challenges include previous history of incarceration and injecting drugs 30 days prior to incarceration. Other factors showing frequent associations with difficulty of challenges include region, age (older people face difficulties more often), being previously informed about a hepatitis C-positive status, and having a lower index of social support.

The mean number of reentry challenges identified as difficult by the study participants was 6.11 ± 4.37 (range: 0–17). In the multiple linear regression model, a history of previous incarcerations and injecting drugs in the 30 days prior to incarceration were positively correlated with having a greater number of reentry challenges, while higher levels of social support were correlated with facing fewer reentry challenges (Table III).

Discussion

To the best of our knowledge, this is the first comprehensive assessment of community reentry challenges by prisoners in the former Soviet Union. Unlike studies of prisoners only a few decades ago, prisoners today have a higher burden of medical, psychiatric and infectious diseases that require not only diagnosis during incarceration, but continuity of care after release (Fazel and Baillargeon, 2011). Importantly, not only is the magnitude of the challenges great in this sample, but it points to both social and medical disenfranchisement. Notwithstanding such challenges faced by all vulnerable populations, prisoners about to reenter the community must navigate a system that is “foreign” or “changed” since they were last in the community, especially for those who were diagnosed with new medical or psychiatric co-morbid conditions.

This study links reentry challenges data to the prevalence of infectious diseases and drug use, history of incarcerations, and socio-economic characteristics of prisoners. Facing a greater number of reentry challenges is associated with a history of previous incarcerations, having injected drugs in the 30 days prior to incarceration, and having a lower social support index (Table III).

The exacerbating impact of recidivism on the chances for successful reentry into the community is not only proved by the described associations, but also further corroborated by the results of the evaluation of reentry challenges (Figure 1). In line with findings reported in other parts of the world (Choi *et al.*, 2010; Freudenberg *et al.*, 2008; Needels, 1996; Roman, 2004; Binswanger *et al.*, 2011), the most important and difficult challenges anticipated by the study participants are finding a job or a stable source of income and staying out of prison following release. The evaluation of tasks as difficult is substantially higher among those prisoners with a history of incarceration compared to first-time offenders. Similarly to other challenges, finding a job or a stable source of income is deemed difficult by 65 percent of previously incarcerated vs 39 percent of first-time offenders, and staying out of prison shows an even greater difference – 64 vs 34 percent, respectively. The finding that recidivist prisoners identified more reentry challenges might represent two divergent and possible reinforcing explanations. It might be the case that recidivists have experienced the reentry process before and thereby have a more realistic perspective of the reentry process. This hypothesis is generally in line with the overall unrealistic optimism of prisoners about their living situation post-release (Dhami *et al.*, 2006; Choi *et al.*, 2010). Alternatively, recidivists may have more complicated social and medical co-morbidities, suggesting more unmet need and previous disruptions of social integration. Irrespective of the explanation, however, is the need to enhance efforts to reduce reentry challenges and factors associated with recidivism in order to avoid such situations. Effective reentry programs, as previously described, may ultimately need provision of case management to overcome basic needs, followed by effective treatment and care for substance use disorders and mental illness (Springer *et al.*, 2011), both of which are highly correlated with recidivism and poor post-release outcomes (Belenko, 2006; Council of State Governments, 2003).

Active drug use at the time of incarceration, primarily of opioids, has important implications for treatment within prison and after release. Opioid dependence is a chronic, relapsing condition for which numerous evidence-based treatments are available, including medication-assisted therapies (MAT) such as methadone, buprenorphine and extended-release naltrexone (Altice *et al.*, 2010). In Ukraine, MAT is not yet available in criminal justice settings. While MAT does exist in the community, recent data have shown that coverage remains low (Wolfe *et al.*, 2010), and as of September 2012 only 1.8–2.6 percent of the estimated number of IDUs in the country were receiving opioid substitution treatment (Ukrainian Institute on Public Health Policy, 2012; Ministry of Health of Ukraine *et al.*, 2012). Prisons could provide an important opportunity to initiate evidence-based treatment, reduce overdose after release, reduce HIV transmission risk behaviors in prisons and post-release, improve continuity of care post-release and ultimately result in fewer reentry challenges (Kinlock *et al.*, 2009; Wilson *et al.*, 2012; Hedrich *et al.*, 2012). MAT has been shown to be an effective measure of significant reduction in illicit drug use and related risk behavior both in community settings (Lawrinson *et al.*, 2008) and in prisons (Dolan *et al.*, 2003; Stallwitz and Stover, 2007). Further, methadone treatment has been associated with reduced recidivism and arrest (Schwartz *et al.*, 2009; Levasseur *et al.*, 2002) as well as higher levels of quality of life and employment (King *et al.*, 2006; de Maeyer *et al.*, 2011), both being the most important reentry challenges identified by these prisoners. At the same time, failure to address post-release substance abuse problems results in lower chances of obtaining employment, reuniting with family, remaining abstinent and staying out of prison (Belenko, 2006; Taxman *et al.*, 2002; Petersilia, 2001).

What remains perplexing is the obvious example of cognitive dissonance between the expected and reported challenges related to drug use. Despite the knowledge that drug dependence is a chronic and relapsing condition, in the sub-group of active drug users, as few as 52 percent of respondents reported that it would be difficult to get help staying off drugs. Despite barriers to entry into OST programs in Ukraine, requiring registration of drug users and abrogation of civil rights (Izenberg and Altice, 2010), less than half identified getting OST as being challenging and, even among the 18 individuals who had previously enrolled in OST, only 50 percent said it would be difficult to get help staying off drugs and only 28 percent answered that it would be challenging to get back into an OST program. A lack of awareness about drug dependence treatment options creates the perception about the absence of adequate treatment or illusions about the possibility of abstinence from drugs without assistance (Bachireddy *et al.*, 2011). This finding is further supported by the beliefs regarding the methods that can help with abstaining from drugs after release: only 14.8 percent of active drug users identified that getting help staying off drugs would be needed and only 0.6 percent identified OST as an option. As a result, increased education and social marketing for prisoners and prison staff are urgently needed in this region to overcome obstacles to implementing OST.

Not surprisingly, low levels of social support were associated with perceiving more reentry challenges. Such individuals with low social support may suffer from low self-esteem, self-efficacy and high community stigmatization, especially among drug-users, people with HIV infection and people with a history of incarceration (Choi *et al.*, 2010; Ministry of Health of

Ukraine, 2010). Even with all precautions taken to ensure confidentiality, observed under-reporting of drug use, as evidenced by the low prevalence of IDU compared to a markedly higher HCV prevalence (Azbel *et al.*, 2013), presents additional evidence of the high levels of self and community stigmatization experienced by PWIDs in Ukraine resulting from the infringement on drug users' rights (for example, registries of PWID, revocation of driver's licenses, limits to employment, etc.).

Since a large portion of the questions in the standardized social support scale are related to interpersonal relations and support from family, friends or a partner, interventions that may improve social support of recently released prisoners are not straightforward. At the same time, most individuals who successfully reenter communities rely on formal or informal social networks to assist them. Such networks, however, may either be helpful or destructive during the vulnerable post-release period, especially those networks that perpetuate return to drug use and criminal thinking. Case management to facilitate linkage to care is one type of external provision of social support that may be harnessed for individuals with high levels of need (Springer *et al.*, 2011; Butzin *et al.*, 2005; Hammett *et al.*, 2001) or, alternatively, utilizing family and friend networks may prove beneficial for some individuals.

Finally, the analysis of perceived importance and expected level of difficulty shows that prisoners tend to place the tasks that involve obtaining help from state systems, including the healthcare system, lower on the scale of relative importance, but nonetheless difficult when assessed as applicable (i.e. getting help staying off drugs, getting government income for disability, getting treatment for illnesses, getting help for emotional problems, etc.). At the same time, intrinsic tasks, which do not require external support, are rated as more important, but generally less difficult (reuniting with family or friends, finding a permanent place to stay). The two main exceptions are finding a job and staying out of prison, which were evaluated as both most important and relatively difficult by respondents. The observed relative importance ranking is generally in line with the Maslow's model of the hierarchy of needs, where basic needs, such as food, shelter or employment are perceived as more important than getting treatment for various disorders (Springer *et al.*, 2011). Rating such vital tasks as getting treatment for somatic and mental diseases as unimportant significantly reduces the likelihood of seeking medical help for these disorders, especially among vulnerable populations (Gelberg *et al.*, 2000). One of the possible explanations of why extrinsic tasks are evaluated as difficult is the presence of structural impediments to receiving medical care by marginalized populations (Izenberg and Altice, 2010), which results in increased distrust in government subsidized services and further reduces the chances of recently released individuals receiving medical help.

The methodology employed in this study allows for the extrapolation of the data to the general prison population of Ukraine expecting release; however, it has several limitations. With all the measures taken to reduce self-reporting bias, there are reasons to believe that a number of parameters were possibly not reported accurately. Since the study did not involve post-release follow-up, the actual magnitude of challenges faced upon release could not be assessed and compared to the expectations of the respondents. Nevertheless, this study is an important step towards understanding the challenges faced by prisoners upon release and the

possible ways to improve community re-integration, reduce recidivism, as well as considerations for future research in this area.

This study demonstrates results which are consistent with findings on reentry challenges and associated factors reported in other parts of the world, with the top three challenges assessed as finding a job or a stable source of income, staying out of prison, reuniting with family or friends, and the correlates of facing a greater number of challenges being previous incarcerations, injecting drugs prior to incarceration, and having low social support. It is, therefore, critical to design, implement and assess interventions aimed at managing drug dependence and improving social support both in the prisons and in the community to ensure continuity of care and contribute towards the reduction of recidivism and risk behavior.

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Figure 1.
Non-specific reentry challenges

Figure 2.
Risk-specific reentry challenges

Table I

Characteristics of study participants

<i>Characteristics</i>	<i>n</i>	<i>%</i>
<i>Region</i>		
Central	104	25.9
South	98	24.4
West	97	24.1
East	103	25.6
<i>Age (median = 30.0 years)</i>		
30 years	212	52.7
>30 years	190	47.3
<i>Gender</i>		
Female	81	20.1
Male	321	79.9
<i>Education^a</i>		
Lower secondary, primary or no education	97	24.2
Higher secondary	181	45.0
Professional technical/less than three years of college or higher	124	30.8
<i>Marital status^b</i>		
Not married or unknown	298	74.1
Married	104	25.9
<i>Monthly income (legal and illegal) prior to incarceration^c</i>		
No income	48	11.9
Less than 1,776 UAH per month	195	48.5
Greater than 1,776 UAH per month	159	39.6
<i>Previous incarcerations</i>		
This episode is the first incarceration	191	47.5
One or more previous incarcerations	211	52.5
<i>Self-reported history of injecting drugs</i>		
No	191	47.5
Yes	211	52.5
<i>Self-reported history of use of opioids</i>		
No	202	50.2
Yes	200	49.8
<i>Self-reported injecting drug use during 30 days prior to incarceration</i>		
No	258	64.2
Yes	144	35.8
<i>Self-reported use of opioids during 30 days prior to incarceration</i>		
No	265	65.9
Yes	137	34.1
<i>Previous enrollment in opioid substitution treatment</i>		
Never enrolled	384	95.5

<i>Characteristics</i>	<i>n</i>	<i>%</i>
Previously enrolled	18	4.5
<i>HIV status (based on study screening)</i>		
Negative	324	80.6
Positive	78	19.4
<i>Previously aware of being HIV positive</i>		
Unaware	38	9.5
Aware	37	9.2
HIV negative or refused to answer	327	81.3
<i>Ever prescribed antiretroviral treatment</i>		
No	394	98.0
Yes	8	2.0
<i>Hepatitis C virus antibody status</i>		
Negative	161	40.0
Positive	241	60.0
<i>Previously aware of being hepatitis C positive</i>		
Unaware	215	53.5
Aware	26	6.5
Hepatitis C virus negative	161	40.0
<i>Total social support scale (median = 2.90)</i>		
Low	102	25.4
Middle	190	47.3
High	100	24.9
Characteristics	n	%
<i>Emotional/information social support sub-scale (median = 2.88)</i>		
Low	101	25.1
Middle	193	48.0
High	98	24.4
<i>Tangible social support sub-scale (median = 2.75)</i>		
Low	116	28.9
Middle	175	43.5
High	101	25.1
<i>Affectionate social support sub-scale (median = 3.00)</i>		
Low	121	30.1
Middle	153	38.1
High	118	29.4
<i>Positive social interaction social support sub-scale (median = 3.00)</i>		
Low	106	26.4
Middle	184	45.8
High	102	25.4

Notes: n = 402;

^a education: indicated highest level of education attained; primary is up to grade 4, lower secondary is up to grade 9, higher secondary is up to grade 12;

^b not married or unknown: single, separated or widowed, including unknown status; married: registered, un-registered marriage and having a partner;

^c 1,776 UAH approximately equals to USD 222 (2011 year exchange rate)

Table II

Bivariate associations between challenges and characteristics of study subjects

Correlates Number of subjects, who reported relevancy of challenge (N/A and refusals excluded)	Challenges							
	Finding a job or a stable source of income	Staying out of prison following release	Reuniting with family or friends	Finding permanent place to stay	Getting government income for disability	Getting treatment of illnesses other than HIV	Getting help staying off drugs	Getting access to OST
	<i>n</i> = 393 <i>p</i>	<i>n</i> = 376 <i>p</i>	<i>n</i> = 387 <i>p</i>	<i>n</i> = 394 <i>p</i>	<i>n</i> = 281 <i>p</i>	<i>n</i> = 335 <i>p</i>	<i>n</i> = 193 <i>p</i>	<i>n</i> = 145 <i>p</i>
Percentage of respondents identifying a challenge as difficult (among those, who identified it as applicable)	52.9%	50.0%	30.2%	21.3%	75.1%	56.1%	49.7%	64.1%
<i>Region</i>								
Central	62.6% 0.048 *	60.2% 0.015 *	23.2% 0.352	13.9% 0.001 *	80.5% 0.339	62.6% 0.232	60.0% 0.102	69.5% 0.645
South	50.0%	52.2%	32.6%	35.4%	66.7%	59.3%	46.9%	55.6%
West	55.7%	50.0%	34.0%	20.6%	76.2%	48.3%	48.9%	62.2%
East	43.6%	37.0%	31.2%	16.0%	73.4%	53.5%	36.4%	63.6%
<i>Gender</i>								
Female	70.1% 0.001 *	46.6% 0.514	28.0% 0.639	21.8% 0.909	73.9% 0.840	60.3% 0.437	54.8% 0.462	53.3% 0.166
Male	48.7%	50.8%	30.8%	21.2%	75.3%	55.1%	48.3%	67.0%
<i>Age</i>								
30	43.0% 0.000 *	47.2% 0.256	25.1% 0.022 *	17.3% 0.040 *	75.6% 0.811	55.0% 0.685	44.9% 0.13	60.2% 0.258
30	64.0%	53.1%	35.9%	25.8%	74.4%	57.2%	55.8%	69.4%
<i>Monthly income prior to incarceration</i>								
No income	68.8% 0.009 *	58.7% 0.434	29.2% 0.712	22.9% 0.932	74.2% 0.677	61.0% 0.104	58.3% 0.345	57.9% 0.398
Less than 1,776 UAH per month	55.6%	48.1%	32.2%	21.6%	77.4%	60.6%	53.0%	70.7%
Greater than 1,776 UAH per month	44.9%	49.7%	28.2%	20.5%	72.6%	48.8%	44.2%	60.3%
<i>Previously incarcerated</i>								
No previous incarcerations	38.9% 0.000 *	33.9% 0.000 *	22.8% 0.003 *	11.9% 0.000 *	73.4% 0.513	47.4% 0.003 *	36.1% 0.001 *	63.6% 0.908
One or more previous incarcerations	65.4%	63.9%	36.7%	29.7%	76.8%	63.5%	60.0%	64.6%
<i>Ever injected drugs</i>								

Correlates		Challenges							
Number of subjects, who reported relevancy of challenge (N/A and refusals excluded)	Finding a job or a stable source of income	Staying out of prison following release	Reuniting with family or friends	Finding permanent place to stay	Getting government income for disability	Getting treatment of illnesses other than HIV	Getting help staying off drugs	Getting access to OST	
	<i>n</i> = 393	<i>n</i> = 376	<i>n</i> = 387	<i>n</i> = 394	<i>n</i> = 281	<i>n</i> = 335	<i>n</i> = 193	<i>n</i> = 145	
Percentage of respondents identifying a challenge as difficult (among those, who identified it as applicable)	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>	
No	48.9%	47.5%	35.6%	30.1%	75.9%	52.6%	—	—	
Yes	56.5%	52.3%	25.6%	13.5%	74.5%	59.1%	49.7%	64.1%	
<i>Injected drugs 30 days prior to incarceration</i>									
No	45.8%	43.6%	32.9%	25.2%	74.3%	49.5%	28.1%	56.1%	
Yes	65.3%	60.7%	25.7%	14.6%	76.3%	66.9%	58.8%	67.3%	
<i>Ever enrolled in OST</i>									
No	52.8%	50.1%	31.7%	22.1%	75.1%	56.4%	49.7%	67.7%	
Yes	55.6%	47.1%	0.0%	5.6%	75.0%	50.0%	50.0%	33.3%	
<i>HIV status</i>									
HIV negative	48.4%	46.0%	30.5%	20.8%	74.7%	54.2%	48.9%	64.7%	
HIV positive	71.4%	66.2%	28.9%	23.4%	77.1%	63.4%	51.9%	62.8%	
<i>Previously aware of being HIV positive</i>									
Unaware	65.8%	63.9%	32.4%	28.9%	71.4%	57.6%	40.0%	64.7%	
Aware	75.7%	66.7%	24.3%	16.2%	81.5%	70.3%	58.8%	61.5%	
HIV negative or refused to answer	48.7%	46.4%	30.7%	21.0%	74.7%	54.0%	48.9%	64.7%	
<i>Hepatitis C virus antibody status</i>									
Negative	45.6%	44.3%	34.6%	23.6%	78.5%	46.6%	44.4%	57.9%	
Positive	57.9%	53.7%	27.4%	19.8%	73.0%	62.4%	50.6%	65.1%	
<i>Previously aware of being hepatitis C positive</i>									
Unaware	56.9%	51.7%	27.9%	19.4%	72.1%	62.7%	49.7%	63.2%	
Aware	65.4%	69.2%	23.1%	23.1%	80.0%	60.0%	56.5%	75.0%	
Hepatitis C virus negative	45.6%	44.3%	34.6%	23.6%	78.5%	46.6%	44.4%	57.9%	
<i>Social support scale (total)</i>									

Correlates Number of subjects, who reported relevancy of challenge (N/A and refusals excluded)	Challenges							
	Finding a job or a stable source of income	Staying out of prison following release	Reuniting with family or friends	Finding permanent place to stay	Getting government income for disability	Getting treatment of illnesses other than HIV	Getting help staying off drugs	Getting access to OSI
Percentage of respondents identifying a challenge as difficult (among those, who identified it as applicable)	<i>n</i> = 393 52.9% <i>p</i>	<i>n</i> = 376 50.0% <i>p</i>	<i>n</i> = 387 30.2% <i>p</i>	<i>n</i> = 394 21.3% <i>p</i>	<i>n</i> = 281 75.1% <i>p</i>	<i>n</i> = 335 56.1% <i>p</i>	<i>n</i> = 193 49.7% <i>p</i>	<i>n</i> = 145 64.1% <i>p</i>
Low	60.0% 0.139	50.5% 0.120	36.7% 0.009*	31.7% 0.001*	75.4% 0.991	67.9% 0.002*	46.9% 0.29	56.8% 0.396
Middle	52.4%	53.8%	32.8%	21.1%	74.8%	57.6%	55.6%	69.7%
High	46.0%	40.7%	18.2%	10.1%	74.4%	41.2%	42.6%	61.9%

Note:

* Significant at *p*, 0.05

Table III

Multiple linear regression: correlates of facing greater number of challenges

Correlate (significant at p, 0.05 level) ^a	Regression coefficient (95% confidence interval) ^b
Previously incarcerated	2.11 (1.29; 2.93)
Injected drugs during 30 days prior to incarceration	1.96 (1.12; 2.80)
Total social support index (continuous)	-0.67 (-1.05; -0.29)

Notes:

^a Factors not significantly associated with increased number of challenges: region, gender, age, monthly income prior to incarceration, lifetime history of injecting drugs, history of OST enrollment, HIV status, previous awareness of HIV status, hepatitis C status, previous awareness about hepatitis C status;

^b non-standardized B coefficient; dependent variable: number of challenges identified as hard