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Multi-level implementation factors that influence scale-up of methadone maintenance treatment in Moldovan prisons: A qualitative study

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Abstract

Introduction: People who inject drugs (PWID) are overrepresented in prison populations, especially in the Eastern European and Central Asian region (EECA), where HIV incidence and mortality continue to rise. Modeling data suggest that methadone maintenance treatment (MMT) scale-up in prison with continuation after release could substantially reduce new HIV infections. Moldova, one of four countries in the EECA to have introduced MMT in prisons, has faced challenges with its scale-up.

Method: To improve implementation of MMT in Moldovan prisoners, we analyzed the qualitative interviews of 44 recently released Moldovan prisoners with opioid use disorder who either accepted or rejected MMT while incarcerated; these 44 were among a subset of 56 participants in a quantitative survey who had complete interview data. After translating and back-translating interviews, we used content analysis to identify key barriers and facilitators to MMT uptake.

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CRediT authorship contribution statement

FLA, MP, LA, and RM designed the study and wrote the protocol (conceptualization, methodology, funding acquisition). FLA provided the funding for the research. SD and SC supervised the implementation of the study (project administration, supervision). MP conducted all interviews and implemented the study protocol. MP, LA, and RM developed the codebook to analyze the qualitative interview data; MP and GO coded the interview data (data curation). GO, RM, and MP analyzed the coded interview data (data curation). GO wrote the original draft of the manuscript. FLA, GO, AL, MP, LA, RM, SD and SC all contributed to the manuscript revision and approved the final submission.

Declaration of competing interest

All authors declare that they have no conflicts of interest.

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Results: Our qualitative analyses revealed that positive attitudes toward methadone facilitated treatment uptake, yet the study identified three thematic barriers as to why PWID do not accept MMT while in prison, including: 1) negative personal attitudes toward MMT; 2) stigmatization of MMT by informal hierarchies within prison; and 3) distrust of the formal prison hierarchy (i.e., administration), which provides MMT.

Conclusion: Overall, the social forces of the two prisoner hierarchies and distrust between them appeared to outweigh the perceived benefits of MMT and impacted MMT uptake. Here we provide strategies to promote MMT more effectively in prison settings.

Keywords

Implementation science; Methadone; Prisons; Moldova; Evidence-based intervention; HIV

1. Introduction

Moldova is a land-locked country situated within the Eastern European and Central Asian (EECA) region, where HIV incidence and mortality are substantially higher than observed elsewhere globally in the absence of adequately scaled HIV prevention (Joint United Nations Programme on HIV/AIDS [UNAIDS], 2020a). Mathematical modeling data from this region suggest that scaling up methadone maintenance treatment (MMT) is the most effective (Tan et al., 2020) and cost-effective (Alistar et al., 2011) HIV prevention strategy for the region. MMT also increases improvement along the HIV treatment cascade (Low et al., 2016; Mazhnaya et al., 2018), yet methadone remains either absent or under-scaled throughout all EECA countries (LaMonaca et al., 2019). EECA continues to grapple with significant institutional remnants of Soviet-style health care delivery, including within prisons, under which moral biases and prejudices and social intolerance have outweighed the scientific evidence in influencing treatment for opioid use disorder and attitudes toward people who inject drugs (PWID) and people with HIV (PWH) (Golichenko & Chu, 2018; Latypov, 2011; Polonsky, Azbel, Wickersham, et al., 2016; Torrens et al., 2013). As the HIV epidemic in Moldova transitions from being concentrated among PWID to their sexual partners (International Harm Reduction Development Program, 2008; Pîr în et al., 2014), PWID remain a powerful driver of the country’s HIV epidemic (Joint United Nations Programme on HIV/AIDS (UNAIDS), 2020a). HIV incidence and mortality in EECA is increasing particularly among PWID (Joint United Nations Programme on HIV/AIDS (UNAIDS), 2020a). In Moldova, HIV prevalence increased substantially among PWID from 8.5% in 2012 to 13.9% in 2017, while nationwide HIV prevalence increased by a margin of only 0.08% to 0.37% in the same time period (Joint United Nations Programme on HIV/AIDS (UNAIDS), 2017; United Nations Population Division, 2017).

PWID are concentrated in prison populations worldwide (Dolan et al., 2016; Kamarulzaman et al., 2016), but especially in EECA, where the majority of PWID (56–90%) transition through the criminal justice system (CJS) (Altice et al., 2016). The EECA region has some of the highest rates of incarceration and concentration of HIV within prisons (Altice et al., 2016). Between 2 and 56% of prisoners report having injected drugs at some point during their incarceration across 15 European countries; nine of these countries report within-prison injection drug use prevalence at 20–40% (European Monitoring Centre for Drugs and Drug

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Addiction (EMCDDA), 2012). While the proportion of PWID in the general community is estimated to be 0.3% on average across Western Europe (EMCDDA, 2012), it is three-fold higher (0.9%) in Moldova (UNAIDS, 2017). In EECA, research has estimated that PWID, mostly who inject opioids, compose 30%–50% of all prisoners (Altice et al., 2016). Scarcity of injection equipment and high levels of initiation of drug injection lead to high-risk sharing, resulting in elevated HIV transmission risks in EECA prisons (Altice et al., 2016; Azbel et al., 2018; Azbel & Altice, 2018; Izenberg et al., 2014) and in prisons globally (Culbert et al., 2015; Darke, 1998; Jürgens et al., 2009). PWID in EECA are exposed to HIV and other infectious diseases such as hepatitis C virus (HCV) at higher rates and are more likely to have HIV in prison settings than in community settings (Altice et al., 2016; Azbel et al., 2014; UNAIDS, 2014). In Moldova, HIV prevalence in prisons (3.8%) is more than 5.5-fold higher than in the wider population (0.7%) (Joint United Nations Programme on HIV/AIDS (UNAIDS), 2020b). A recent review and meta-analysis of HIV and HCV incidence studies among PWID found any incarceration substantially increased risk for HIV and found that having been recently incarcerated in the past year was associated with substantially higher risk for acquiring HIV (+81%) and HCV (+62%) (Stone et al., 2018).

As in other former Soviet republics, punitive sentencing practices against people who use drugs in Moldova have contributed to the overpopulation of the country's prison system (Institute for Criminal Policy Research, 2018), straining its capacity to support adequate living conditions for prisoners. High levels of incarceration, substance use disorders, and transmission of HIV are mutually reinforcing, and are compounded by low coverage or unacceptability of evidence-based HIV prevention strategies, including MMT and harm reduction programs (Doltu, 2015; LaMonaca et al., 2019). Thus, Moldovan and other EECA prisons remain high-risk environments for opioid-related harms (Altice et al., 2016; Rhodes, 2002; Rhodes et al., 2009).

1.1 Implementing methadone maintenance treatment in criminal justice settings

Methadone maintenance treatment (MMT) is internationally recognized as one of the most effective forms of treatment for opioid dependence, and it is among the most effective HIV prevention strategies available (Altice et al., 2010; Degenhardt et al., 2019; Meyer et al., 2013). When implemented within prisons and continued after release, it is one of the most effective strategies to prevent HIV transmission and death (Altice et al., 2016; Degenhardt et al., 2019; Stone et al., 2021). Persistence on MMT is negatively correlated with recidivism to prison and hepatitis C infection (Dolan et al., 2005; Larney et al., 2012). Despite the wealth of evidence to support MMT, high levels of stigma and prejudice toward MMT in EECA have hindered policies to expand MMT beyond pilot studies (Kazatchkine, 2014; Zabransky et al., 2012). Moldova is one of only three former Soviet republics in EECA to have implemented MMT in prisons as part of its harm reduction program for PWID (Altice et al., 2016); Ukraine, however, started a pilot program in 2020, with 38 patients. The Moldovan National Administration of Penitentiaries, Ministry of Justice and Ministry of Health have coordinated MMT delivery since 2005 and continue to finance its provision in prison and in nonprison settings (Ministry of Labour and Social Protection of Moldova, 2020; Yatsko, 2020). Despite recommendations to scale-up MMT to 20%–40% to control HIV, MMT coverage remains <3% among Moldova's estimated 30,200 PWID

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(Bledichesku, 2017; EMCDDA, 2016). Although Moldovan prisons have provided MMT since 2005, coverage remains low, with many eligible individuals being unwilling to enroll in treatment (Bledichesku, 2017). By 2016, only 84 clients, or 5% of the estimated 1600 PWID in Moldovan prisons, were receiving MMT (Costin-Codreanu et al., 2016; Otiashvili, 2016) and studies of former prisoners suggest within-prison bullying and ostracism by other prisoners contribute to lack of enrollment in treatment (Polonsky, Azbel, Wegman, et al., 2016).

Past studies document the contribution of formal prison administration and medical personnel in prisons in undermining MMT scale-up (Caplehorn et al., 1998; Polonsky et al., 2015; Talal et al., 2013; Tracy et al., 2009). Negative attitudes of personnel, along with prisoners' negative attitudes toward methadone, are a barrier to MMT uptake in EECA prisons (Mukherjee et al., 2016; Polonsky et al., 2015; Polonsky, Azbel, Wickersham, et al., 2016; Wickersham et al., 2013). The anticipated social consequences of engaging in MMT are also believed to shape MMT acceptance (Polonsky, Azbel, Wickersham, et al., 2016), yet the social context of access to MMT in prisons in Moldova, EECA, and elsewhere is poorly understood. In Moldova and other EECA countries, informal governance by prisoner hierarchies exerts control over the social order of prison communities by monopolizing and pooling resources, including access to drugs (Azbel, 2020; Azbel et al., 2021; Azbel & Altice, 2018; Butler et al., 2018; Gasparyan et al., 2018; Kupatadze, 2014; Liberman et al., 2021). This informal governance operated by a caste system (i.e., hierarchies) of prisoners can compensate for the limited resources (e.g., food, personal hygiene, etc.) that official governance and prison administrators provide (Garces et al., 2013; Skarbek, 2014, 2016). Despite the informal prison hierarchy's influence on prison settings—an environment that is associated with injection drug use—a paucity of research exists on prison MMT implementation in the social context of informal prisoner governance (Rhodes et al., 2019).

This study assesses how MMT uptake in Moldovan prisons is shaped by individual attitudes toward MMT and by two distinct contexts of prisoners' experience of MMT access in the prison environment: the prisoner hierarchy that provides informal governance, and the official prison administration that provides MMT (Fig. 1). The study investigates whether MMT acceptance in Moldovan prisons is associated with improved attitudes toward prison administration, whether the social experience of prisoners with the informal governance system differs across the MMT treatment divide, whether informal governance and hierarchy perpetuate stigma and discrimination against MMT in Moldovan prisons, and whether avoiding MMT is associated with stigma against MMT itself and personal safety concerns.

2. Methods

The study team conducted a thematic analysis of 44 individual qualitative interviews that were embedded within a larger original mixed-methods study. The study combined this analysis with a quantitative survey done concurrently to inform the study's thematic analysis. The study was limited to pharmacological treatment with methadone, the only medication available in Moldovan prisons, which this study abbreviates as MMT (methadone maintenance treatment).

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2.1. Participants

Study participants ($N = 44$) were recently released prisoners from 17 Moldovan prisons. Eligibility criteria were (1) age 18 years; (2) PWID who met ICD-10 criteria for opioid dependence; and (3) released to communities within the past 3 months where MMT was available in both prisons and communities. The study recruited participants through referrals from an NGO that provides TB and HIV prevention services to current and former prisoners. The study assessed PWID released from prison to avoid within-prison repercussions for participation. The study compared those who had ($N = 20$) and had not ($N = 24$) received MMT while incarcerated because the study team perceived that the two groups would differ in their attitudes and within-prison experiences.

In June 2014, participants met with trained staff at two sites in Moldova: Chisinau and Balti. Study staff assessed participants in Russian using semi-structured qualitative interviews and an anonymous quantitative online survey. The study paid participants 150 Moldovan Lei (10 USD) after completion of the interview. Institutional review boards at Yale University and the Ukrainian Institute on Public Health Policy approved the study.

2.2. Measures

Participants first completed an anonymous quantitative online survey that used a 10-item, seven-point Likert-type response instrument as a standardized scale to assess MMT attitudes (Springer & Bruce, 2008), with higher numbers reflecting positive attitudes. Qualitative interviews followed a semi-structured format, and were audio-recorded and conducted in a private room directly following the online survey by trained interviewers using an interview guide. On average, surveys took 12 min and the semi-structured interviews took 45 min.

2.3. Analysis

A team of qualitative researchers transcribed the semi-structured interviews verbatim in Russian, translated the interviews into English for analysis, and then back-translated the interviews into Russian to ensure accuracy (Brislin, 1970). Co-authors coded transcripts using an iterative process based on discussions among the research team and then developed and edited a code book to reflect themes identified in the transcripts. Analysis used Dedoose qualitative software (Dedoose Version 8.2, web application for managing, analyzing, and presenting qualitative and mixed method research data [2018]. Los Angeles, CA: SocioCultural Research Consultants, LLC www.dedoose.com).

The study coded MMT attitudes as 1 = negative to 3 = positive for the quantitative component of analysis. Co-authors decided scales a priori, on the basis of broader suppositions that an individuals' MMT attitudes are either predominantly negative or predominantly positive. The co-authors who coded the transcripts then applied those scales to each excerpt consensually. Inter-rater reliability between the co-authors who coded the transcripts was consistent, excluding a few minor debates on the numerical weights assigned to codes such as MMT attitudes, in which case the co-authors discussed the weights until they reached consensus. The quantitative component allowed for the median split of respondents' MMT attitudes into positive and negative attitudes. The study averaged the numerical codes for each interview to determine whether each respondent's attitude toward

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MMT was, on average, negative or positive. The study attributed each respondent quote to that respondent's ID, whether they received methadone or not while in prison, their age, and their gender (Table 1).

3. Results

A comparison survey of 56 people found that respondents on MMT had no differences in MMT knowledge relative to those not on MMT, but those receiving methadone did have more positive attitudes toward MMT and believed it to be effective and endorsed fewer myths about it. Participants irrespective of MMT status did not differ demographically for age (mean = 36 years), sex (women = 20%), and marriage status. Respondents on MMT, however, also felt more unsafe and experienced bullying. To better understand factors within the prison environment that made people feel unsafe and related to bullying, as part of the larger original study (Polonsky, Azbel, Wegman, et al., 2016), this study analyzed qualitative interviews to understand the prison-level factors and individual-level factors that contributed to these findings.

3.1. Prison-level factors influencing MMT acceptance in prison

The prison-level factors affecting respondents' engagement in MMT fell into two thematic categories: (1) respondents' relationship with the informal prison governance, a social hierarchy of prisoners which was the "de facto" government of prison communes; and (2) respondents' relationship with the formal prison governance that oversaw general security and provided MMT.

3.1.1. Informal prison governance—Respondents described a system of informal governance, or self-governance by the prisoners themselves, comprising a social hierarchy of incarcerated individuals (Fig. 2). The highest caste of this hierarchy are the v*ory-v-zakone* ("thieves-in-law"), individuals with elite status in organized crime networks who have been incarcerated repeatedly (Skoblikov, 2002). *Vory* govern all of the lower castes in the prisoner hierarchy according to a set of rules, an internal prisoner code of conduct known as the *ponyatiya* ("the understandings"). The largest of these lower castes is the *muzhiki* ("normal guys"), also known as *poryadochniye* ("orderly guys"). In the prisoner hierarchy, *muzhiki* must adhere to the *ponyatiya* and donate to the *obshchak*, a communal prisoner fund that the *vory* control, to continue being considered as respectable and decent people and remain *muzhiki*. In each prison commune, the *vory* exert influence over *muzhiki* through a *polozhenets* ("overlord") whom they appoint to manage the *obshchak*, communicate with the formal prison administration and maintain social order in the commune. *Polozhentsy* delegate orders to *smotryashiye* ("overseers"), each of whom control an area of the prison commune in which they supervise the *muzhiki* and integrate newly incarcerated individuals into the commune by teaching them the *ponyatiya*. The *polozhenets* and *smotryashiye* employ *blatniye* ("enforcers") to enforce the rules of the *ponyatiya*. Fulfilling one's role in the hierarchy carries the prospect of ascending through its ranks and eventually attaining the elite status of *vor-v-zakone* ("thief-in-law") (Zhadayev, 2020).

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Polozhentsy and *smotryashiye* used their authority to suppress MMT uptake in the prison commune. Respondents reported that these informal authority figures influenced access to MMT to a much greater extent than the formal prison administration.

> Every prison has its own man who is looking after the prison: smotryashii, maybe polozhenets. They don't let a lot of people get into this [methadone] program, even, like, they bring drugs straight to jail and sell it. They have a very big influence, because of that. There were 3–4 of us in Sorocas, although a lot of people would like to get on this program…if you want to get into the program, you have to go up to someone from the "authorities" and ask, may I go and start the program, or I may not?
>
> ID: 7

> The [formal] administration doesn't have a say at all. The barrier to the methadone program created by the hierarchy is one of the greatest issues. Many would be in the program had it not been for that hierarchy. It would be supported. There are such rules against taking methadone.
>
> ID: 1121

The *blatniye* (enforcers) decried receiving MMT as a violation of the *ponyatiya*. They designated prisoners on MMT as *neputyoviye* ("rogues"), the lowest social caste of the social prisoner hierarchy (Fig. 2).

> There are ranks. There are blatniye, there are muzhiki, there are neputyoviye. The blatniye just gave an order that only neputyoviye will drink methadone. Decent people – muzhiki or blatniye – do not fall apart. If you want to drink it, then you'll become neputyoviye. You'll simply be pushed away.
>
> ID: 2203

Whereas moving onto methadone carried the specter of being labeled as one of the *neputyoviye*, injecting drugs was acceptable in the social hierarchy's criteria of appropriate behavior for "respectable" prisoners; i.e. all prisoners except for the *neputyoviye*.

> There are rules that you can't take methadone in prison. Respectable people don't drink methadone. Yes, they inject. But they don't take methadone.
>
> ID: 1121

The hierarchy leadership employed *blatniye* to intimidate the masses of ordinary prisoners from accessing methadone because they understood that as an opioid substitute, methadone would endanger their profits from trafficking opioids and other drugs into prison.

> The criminal groups that have power in prisons, they are handling this contraband. They are smuggling and selling drugs and send money to the obshchak, the 'common cash fund'. The money goes there to bribe the administration, to ensure a good life in the prison. If they don't smuggle these drugs, the same poppy, or heroin, they lose profits. That is why they beat people so that they will not go into the program.
>
> ID: 223

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> Interviewer: There are drugs in prison. And blatniye benefit from that, right? They don't want methadone to be there.
>
> Respondent: I think that it is really like that. If many will take methadone, then they won't buy heroin, poppy. For that … the authorities, put barriers, bans.
>
> ID: 2203

While motivated by financial profit, the hierarchy's goal of dissuading prisoners from accessing MMT appeared to align with the agenda of prisoners who were not on MMT and used the illegal drugs that the hierarchy trafficked. These prisoners were concerned about the effect of MMT uptake on their access to street drugs, which suggested that they supported the hierarchy's intimidation of prisoners receiving MMT.

> If somebody is enrolled in the methadone program, he is not using other drugs. Prisoners who are not taking methadone do not like this. They want drugs to be brought to the prison.
>
> ID: 223

The hierarchy's shunning of incarcerated individuals on MMT translated into broader discrimination in the prison commune against those receiving MMT.

> Before you get on the program, you need to go to those blatniye and tell them that here I am, I want to take methadone. Many are just scared to even go. I do not know how to eradicate it …if somebody could talk to them, so that they would pay less attention to all of it and so that they don't set others up against those who take methadone …they'll break him…he will just be concerned.
>
> ID: 7

> Some say [about prisoners receiving MMT], 'Why are you bowing before the government, the police?' It is very bad when a person is in a cell and… They say right away that you are going cap in hand. They will start treating you differently.
>
> ID: 16

Blatniye intimidated and harassed prisoners who were seeking or receiving methadone, both socially and physically.

> Some prisoners may prevent those who need methadone therapy from taking it. I've heard that there are some prisoners' resolutions…you know, they have their internal rules. I would like to ask to help influence other prisoners – many people do not take it because they are afraid that they would be beaten. It is prohibited there. The prisoners themselves prohibit it.
>
> ID: 223

If *smotryashiye* and *blatniye* did not condemn methadone or accessed it themselves, then the *vory* would demote them in the prisoner hierarchy. This social dynamic strengthened the incentive for the *vory*'s direct subordinates to minimize their commune's access to methadone.

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> If a blatnoy or a smotryashii takes methadone… Firstly, a smotryashii will not be placed in the position of a supervisor. If he takes methadone, he will never be appointed to this position, because he is a drug addict.
>
> ID: 16

The permissibility of receiving methadone for a given prisoner depended directly on their position in the hierarchy. In contrast to *smotryashiye*, *blatniye* and *muzhiki*, the *vory*, who sat atop the hierarchy, could receive methadone without facing scrutiny.

> Interviewer: What if a vor-v-zakone starts taking methadone? Will anything happen?
>
> Respondent: Nothing will happen. It is his private life.
>
> ID: 16

Respondents specified that they wanted to enter MMT but would not do so because they feared that enforcers would punish them for violating the prisoner code of conduct.

> If I ended up in prison again, I would enroll in the methadone program if blatniye didn't forbid it.
>
> ID: 4

Individuals needed to conceal their participation in MMT to avoid becoming exposed as violators of the *ponyatiya* and ostracized by their peers in the prison commune.

> I think that prisoners receiving methadone will be hiding…they won't tell. He who takes methadone is no one according to the thief code.
>
> ID: 1107

The informal prison authority's systematic harassment of MMT patients was not uniform across all respondent accounts and did not always dissuade individuals from accessing MMT. In some prison communes, incarcerated individuals were tolerant of their peers' engagement in MMT and respondents considered harassment from their peers unlikely. This finding suggested that differences existed in the prisoner code at different prison colonies.

> Masses exert much influence on this [entering methadone therapy]. Especially depending on the penitentiary where a person is placed in. There are prisons where people treat it calmly, with understanding. The people who had ever taken drugs and were connected with drugs, they were okay with it.
>
> ID: 1118

> Interviewer: If a person starts methadone treatment, how likely is psychological intimidation by other prisoners?
>
> Respondent: Unlikely.
>
> ID: 3

Some individuals accessed MMT in prison without experiencing negative social repercussions.

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> Perhaps subliminally, someone didn't trust me, but I did not experience negative attitudes towards myself.
>
> ID: 1114

Moreover, some respondents experienced social pressure from the prisoner hierarchy enforcers but nevertheless succeeded in accessing MMT.

> I started, and it was difficult with blatniye. They started pressing me: 'You are doing nothing. Come here and work.' I could not work because I was sick. You see? 'Come and work'. I did not come to them to work. I went to the other place – that is, to the methadone program.
>
> ID: 1109

3.1.2. Formal prison governance

Respondents distrusted the prison administration because they believed that it sought to control the prisoners. In particular, they believed that the formal prison authority was providing MMT to prisoners as a means of controlling their behavior. They recounted that the administration manipulated and mistreated prisoners who received MMT. As a result, respondents viewed prisoners on MMT as beholden to the will of the formal prison authorities.

> There emerged such hardships that you become dependent on the administration. They can make you feel really tied to them. They can lock you up in a punishment cell, create a situation whereby you won't be able to take it [methadone] on time, when you feel bad. If you violate something, you've already signed the paper that if you violate the treatment regimen, you are expelled. That's why they [MMT patients] are totally dependent on prison staff and guards.
>
> ID: 124

Respondents asserted that the formal prison administration neglected to foster trust among prisoners because its leadership was not genuinely interested in expanding or improving its MMT program due to the profits that respondents believed the administration reaped from helping to traffic drugs into prison. They explained that promoting MMT would endanger these profits.

> Of course. The prison administration should do something to create trust. If there is no trust no one will be able to do anything [with the methadone program]. But the administration does not do that. Because for them [the prison authorities] it is profitable to peddle.
>
> ID: 1107

> The administration themselves bring in these drugs. There is a person who directly engages in trade, a trafficker, who also has an overseer. The administration cooperates with the prisoners.
>
> ID: 2203

Moreover, respondents often associated prisoners who received MMT with the corruption and manipulativeness that they perceived in the formal prison authority. They believed prisoners who sought MMT were willing to submit themselves to the complete control of

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the prison administration, and, in so doing, had accepted the administration's restrictive policies toward their fellow prisoners, and, therefore, they distrusted them. These beliefs led respondents to distrust incarcerated patients receiving MMT.

> You see, there are specific rules in prison. It is unacceptable for a 'decent' person to take this methadone. There are some unacceptable options for a person … It's for real unacceptable, if he is a 'decent' person. There are some situations when the prison guards inflict their own rules and regime – and that's why people refuse. But there are some people don't care. That is why they are drinking it.
>
> ID: 225

While other respondents did not criticize the moral integrity of prisoners on MMT, they, nevertheless, believed that prisoners who accessed MMT could not be trusted to help their fellow prisoners resist the administration's influence because they were under the control of the prison administration.

> The administration may stimulate drug users. It can manipulate them and [do] whatever they like with them. If they [administrators] need something, they would get it. There is an internal prison law, a code, in addition to administrative regulations – not to tell on anybody, not to follow the prison guards … not to cooperate with the prison guards. Everybody knows it very well that prisoners have their own way inside prison, and it always contradicts the administrative rules. Methadone hampers it all. If a man drinks methadone, he becomes addicted, he is nose-led by the prison administration. Nobody can trust such a prisoner or trust that he will support you, when you need him to help. There are some situations when you need to influence the administration … to announce a hunger strike, or to slash wrists… he will not join you, he will do what administration tells him because he will be dependent on methadone (knocks on the table and sighs).
>
> ID: 223

Receiving MMT from the prison administration violated the prisoner code of conduct in a particularly visible manner—to receive MMT, prisoners had to exit the prison commune daily to receive methadone in the medical clinics of the formal prison staff and provide their signature to record their continued participation in treatment.

> This machine that pours the dose of methadone, it is kept outside the prison.
>
> ID: 2203

> You go to the prison administration offices, put your signature… It is never acceptable in the overseers' book. Prisoners don't have the right.
>
> ID: 1121

3.2. Individual-level factors influencing MMT acceptance in prison

Alongside prison-level factors that influenced MMT acceptance, respondents' personal opinions about methadone and their experiences of MMT influenced MMT acceptance during incarceration. Perceived negative health effects of MMT deterred them from

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receiving MMT in prison. Many believed that methadone was just another addiction and had negative medical consequences for patients.

> Respondent: Well, this is my opinion, methadone destroys you totally. I myself used opium, but I used pure opium: no synthetic additives. But this stuff, it has a negative effect, it destroys you.
>
> Interviewer: What do other inmates think about inmates on methadone?
> Respondent: They think that they are outcasts.
>
> ID: 2110

> Well, they say that there are no side effects. And when a husband of a methadone user brought her a methadone package, it said that methadone causes addiction. I went to this Dasha, the doctor, and said: 'You told us that methadone is not addictive. Not addictive. Here it says that methadone causes addiction.' She said: 'that's it. Get out and do not stir trouble.'
>
> ID: 2117

Respondents not receiving methadone distrusted peers who received it in prison because they believed that these prisoners were addicted to methadone and could not control themselves. Respondents receiving methadone observed that others lost trust in them once they had begun MMT. These personal experiences of the social repercussions of entering MMT posed a barrier to MMT acceptance.

> Drugs are leisure. But for some people… drugs spoil him, and he becomes addicted, he starts spinning out of control. Becomes bad. Starts turning others in. And that is why others look down on those who take methadone.
>
> ID: 4

> Interviewer: While you were taking methadone treatment, did you feel negative attitude towards you from other prisoners?
>
> Respondent: Yes. [They viewed me as a] drug addict. They didn't trust me. They believe [prisoners on methadone] can't be trusted.
>
> ID: 1114

Individuals' experience of mistreatment by medical personnel in the prison MMT program led them to drop out of methadone treatment while incarcerated.

> Interviewer: What is your opinion about methadone treatment?
>
> Respondent: Negative. At first, I thought it would be better, that I will get rid of drugs and addiction. I started taking it, I was advised [to take it]. While I was in the infirmary for three days, I had terrible withdrawal, just impossible, they called an ambulance three times a day. I started taking methadone. At first five drops for ten days. The next ten days I already came up to two drops. Then one morning I gave up. For a week they have been coming to me, still saying – 'will you, or not?' I refused, and that's it. I don't want to be addicted to it. I saw a cellmate who [was addicted].

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ID: 1114

Respondents chose to receive MMT because they understood its health benefits. MMT reduced their desire to inject opioids and thereby lowered their risk of contracting diseases from contaminated injecting equipment.

> In regards to methadone use – it is positive. This is the right way to treat drug addiction.

ID: 2200

> Positive it is in a sense that methadone is better because… a person is not looking for illicit drugs, and you won’t be infected with anything. That’s it, in principle.

ID: 18

Individuals favored MMT for having fewer and less harmful side effects than heroin and homemade desomorphine (“krokodil”) and considered it a safe alternative to these drugs.

> Interviewer: And have you ever heard that methadone is not a good means to treat drug addiction?
>
> Respondent: No, I have not heard it. What I have read in the internet, well about some side effects, but all drugs have side effects, but there are drugs, which very quickly drive, let’s say, a person to extremes. That is why I think that methadone is better than the krokodil, heroin and so forth.

ID: 333

Respondents also endorsed MMT after witnessing how it had helped their fellow prisoners avoid the psychological and physical symptoms of heroin withdrawal.

> The prison population thinks that MMT is a good thing. This is what it is really like, cause when they got locked up many were heavily addicted. They would get a large dosage. If it was not for methadone, I don’t know how they would have managed. They would be going up the wall, slashing wrists… you know what it’s like, this is withdrawal: the psychological withdrawal and the physical symptoms.

ID: 2120

Further, respondents, many of whom had not taken methadone, spoke positively about how the health benefits of MMT helped individuals to stabilize their social life in the prison commune. They related that by receiving MMT and avoiding symptoms of opioid withdrawal, they could avoid acting desperately or illicitly to counteract withdrawal and avoid the legal and social repercussions of those actions for themselves, their family and other prisoners.

> Methadone influenced them positively. They did not have craving, they stopped looking for drugs. They had involved people from outside. Their relatives bring them these parcels [heroin or other things to trade for heroin] at a risk. If they are caught with it, they will be punished; there will be criminal prosecution because it is considered smuggling. When they started drinking this methadone, all these problems disappeared. Their sleep became regular, their life became regular. They no longer needed to be involved in criminal activities, or to smuggle drugs into

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> prison. They found a job, they even started studying, there were jobs they had in prison, they produced some consumer goods in the industrial section.
>
> ID: 223

> A person shoots up, and he must pay for his drugs, so he would steal, kill and buy the drugs, because he is feeling sick, or he is getting withdrawals, he is in pain, and he is ready to hurt someone. He will be desperate. If you will be in his way, he will pull out a knife and commit a crime. But here you come in, it's a safe environment, you get your methadone.
>
> ID: 221

> It [MMT in prison] is positive in the sense that there is less crime compared to what it was before, before the methadone.
>
> ID: 221

Respondents also favored MMT as a free alternative to heroin.

> For a person, it is just a high … and it is free.
>
> ID: 221

Individuals' reasons for accepting MMT were that it could improve their health and stabilize their social situation in prison. Meanwhile, their personal reasons for rejecting MMT stemmed from negative perceptions of methadone and beliefs about its side effects and the belief that fellow prisoners receiving MMT were addicted to methadone and therefore untrustworthy.

4. Discussion

Findings here provide insights into some important barriers to MMT uptake that likely contribute to the low MMT coverage in EECA prisons. Aside from two qualitative studies from Kyrgyzstan (Liberman et al., 2021; Rhodes et al., 2019), this is the first study in Eastern Europe to examine how informal prisoner self-governance, formal prison governance, and individually held beliefs about MMT concurrently affect the decision to either accept or reject MMT while incarcerated.

4.1 Informal prison hierarchies determine who is permitted to use MMT

Similar to studies in Kyrgyzstan (Liberman et al., 2021; Rhodes et al., 2019), this study found that the prison subculture in Moldova creates a barrier to MMT uptake. Prisons in Moldova, which appear to vary depending on the specific colony, exist under two governance systems—a formal system that prison administrators run, and an informal system that incarcerated people create as a form of self-governance. The informal prison government operates under a social hierarchy governed by an ethical and legal code that is determined by the highest caste of this hierarchy. This code forbids the largest caste of individuals, known as "decent people", from taking methadone—taking methadone is something only lower-caste people do. Those from higher castes who enroll in the methadone program will be demoted in the caste system, which may, in part, explain why prisoners with opioid use disorder in Moldova on methadone felt bullied and ostracized

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in previous surveys (Polonsky, Azbel, Wegman, et al., 2016). Although some individuals reported perceived effectiveness of MMT, positive attitudes toward MMT were insufficient to overcome within-prison cultural norms preventing "decent people" from accessing this program.

Previous studies have found low uptake of MMT in EECA prisons (Altice et al., 2016), and they have suggested that this may be due to stigmatization of MMT by both staff and incarcerated people (Polonsky et al., 2015; Polonsky, Azbel, Wickersham, et al., 2016). Studies of Moldovan and other EECA prisons have indicated that prisoner hierarchies enact social stigma against MMT and suppress MMT uptake (Azbel et al., 2021; Cotorobai et al., 2019; Liberman et al., 2021; Otiashvili, 2016). The results of this study show that according to rules by the informal governance (the *ponyatiya*), methadone is something that only lower-caste individuals access, thus limiting wider uptake. Moreover, findings from this study suggest that influential members in the prisoner hierarchy such as overseers and enforcers impose these rules on the prison commune by marginalizing and harassing those who access MMT, such that incarcerated individuals must become social outcasts and risk physical harm to engage in MMT. The finding that these rules, however, are enforced differently in each prison colony suggests that opportunities may exist to influence uptake. Importantly, many EECA prisoners see these rules, the *ponyatiya*, as a stabilizing, moralizing force, in contrast to the often arbitrary rules of the formal prison government (Symkovych, 2018).

4.1.1. Interactions with formal administration discourage MMT uptake—While both an informal and a formal prison government system exist in Moldovan prisons, study participants indicated that the informal governance system has more control over daily prison life. Participants reported that the formal prison administration was corrupt and complicit in the drug trade. Additionally, those who had accepted MMT reported high levels of vulnerability to manipulation by prison administration, especially since the need to receive daily MMT rendered them dependent on this administration. These findings suggest that monopolistic control of MMT by formal prison administration may contribute to lack of trust of MMT programs within prisons, as a previous study also found (Jürgens et al., 2011). Distrust of health care providers is a demonstrated barrier to health care utilization and standards among PWID, including those in prison (Jürgens & Betteridge, 2005; Ostertag et al., 2006; Rubenstein et al., 2016).

While distrust of formal prison administration was universal among incarcerated study participants, this distrust was qualitatively less severe among people receiving MMT than among those who had declined it. Several possible reasons exist for this observation. Individuals who have less distrust the formal administration might be more likely to accept MMT. People receiving MMT are more likely to be members of lower castes within the informal prison hierarchy, meaning that they may experience social stigma within the informal prison government system. Another possibility is that individuals receiving MMT begin to feel more favorably toward the prison administration over time as they interact with them on a daily basis, since MMT requires daily exposure to the prison administration. A plausible explanation for this increased favorability is that the medical personnel providing MMT in Moldovan prisons may begin to relinquish stigmatizing attitudes toward methadone

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as they continue to provide this treatment, a pattern that other studies have observed in prison settings elsewhere (Bandara et al., 2021).

4.2. Individual attitudes toward MMT

Study participants reported many personal reasons for choosing whether to accept MMT. For example, one participant did not want MMT because of methadone's addictive properties, while another reported that methadone "destroys you" (3.2, respondent 2110). Several participants reported that people receiving methadone behaved differently from those not receiving methadone. Some individuals had positive attitudes toward methadone; for example, one person reported that "methadone is better because… a person is not looking for illicit drugs, and you won't be infected with anything" (3.2, respondent 18). These individual attitudes toward methadone interact synergistically with social factors within prison. For example, one study participant reported that because methadone is addictive, and because methadone is distributed by the formal prison government, "nobody can trust such a prisoner…he will do what administration tells him because he will be dependent on methadone" (3.1.2, respondent 223). Thus, as described in previous studies (Polonsky, Azbel, Wickersham, et al., 2016), individual attitudes toward MMT interact with the social environment of the Moldovan prison system to help determine whether a person will participate in MMT. Future strategies might consider the use of informed (Bekker et al., 1999) or shared (Shay et al., 2015) decision aids to help guide prisoners with opioid use disorder to make informed decisions about treatment that are aligned with their preferences.

4.3. Limitations and future directions

While these interviews provide a deeper examination of the culture or risk environment of the Moldovan prison, this study recruited participants from only 17 prisons and findings may not be generalizable to the wider prison community. Additionally, the qualitative nature of this research makes it difficult to estimate prevalence or relative strength of the facilitators and barriers reported. Furthermore, the time-intensive nature of in-depth interviews limited the sample size possible for this research.

Despite these limitations, findings here suggest possible future directions for methadone programs within EECA to help guide MMT scale-up within prisons. For example, study participants reported that the informal prison governance system controls drug distribution within the prison. This experience differs from the Kyrgyzstani experience, where illicit opioids are banned yet opioids are distributed regularly to loyal workers within the informal prison hierarchy every 10 days as a reward for their contributions to work efforts (Liberman et al., 2021; Rhodes et al., 2019). These participants also reported a deep distrust of the formal prison administration. Working within the prison government system as it currently exists—as a dynamic interplay among formal administration, informal administration, and the individual—may allow for more uptake in MMT and other harm-reduction programs. Piacentini and Slade (2015) explain that previous efforts for prison reform in Russia and Georgia failed to consider the collective governance system of the prisoner body, thus limiting reform efficacy (Piacentini & Slade, 2015; Slade, 2013). Very rudimentary observations in Ukraine describe the informal prison government system as a stabilizing presence in the prison, despite its brutality toward those who step out of its rigid norms

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(Symkovych, 2017, 2018). In EECA, the prison system is divided geographically between informal and formal prison governance, with the formal prison government controlling some locations and informal prison government controlling others (Slade, 2018). Strategies that potentially align goals, perhaps to keep their constituents "healthy" may be one way to address divergent views of methadone as treatment for addiction and an effective HIV prevention strategy.

One potential strategy to align motivations would be to involve the informal governance in the delivery of methadone, which previous studies have proposed for needle/syringe exchange programs (Vitellone, 2017). Study participants reported being "nose-led", or ruled, by the administration after enrolling in the methadone program, citing specific concerns such as having to put their signature in an administrator's book as a symbol of relinquishing control to the formal administration (3.1.2, respondent 223). These actions are aligned with the formal governance and make participants complicit with the formal prison authorities. If methadone distribution were to move to an area within the prison that prisoners perceived to be governed by the informal authorities (i.e., not crossing an unspoken line of authority where prisoners already freely congregate and supported by the informal governance), such a move may allay some of the concerns. Alternatively, removing barriers like required signatures may also align with the informal governance system, but, more importantly, having conversations with the informal governance system about what gets in the way of methadone treatment would be an important next step to scale-up treatment.

Additionally, previous work has suggested that methadone is not merely an object, but plays an active role within the prison subculture (Rhodes et al., 2019). Our findings reflect this, since the act of receiving methadone treatment can change an individual's standing in the prison caste system, make the individual vulnerable to manipulation by administrators, or have other toxic social or emotional consequences. When implementing any health care intervention, especially within a non-Western context like Moldova, treatment providers must consider these sociocultural factors (Azbel et al., 2019; Roman et al., 2011). Therefore, future interventions should work within local prison structures to devise locally based ways of encouraging health so as not to cause further harm. The authors recognize, however, that conducting these studies may be politically challenging due to the prevalence of corrupt governance in EECA prisons as well as involving prisoners in the delivery of care (Council of Europe, 2018; Slade & Azbel, 2020; United States Dept. of State, 2018).

5. Conclusion

People who use drugs are overrepresented in prisons throughout Europe, particularly in Eastern Europe and Central Asia, where criminal justice systems are overpopulated and under-resourced. This study has outlined a set of social and individual barriers to uptake of MMT within prisons in Moldova, which introduced MMT into its prisons as HIV prevention in 2005. Moldova is one of only a few former Soviet republics in EECA to have implemented MMT in its prisons. The country's initiative in this area of public health engenders optimism for the expansion of in-prison MMT to other EECA countries, yet MMT uptake among prisoners remains extremely low. Our findings underline the importance of two critically understudied barriers to MMT scale-up in EECA: 1) an

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informal prisoner hierarchy that governs everyday life within the prison commune and, under the current circumstances, seeks to prevent incarcerated individuals from accessing MMT; and 2) distrust of the prison administration that currently provides MMT outside of prisoners' residence. This study suggests that these prison-level factors often override individually held positive attitudes toward MMT and reinforce negative attitudes toward MMT as barriers to MMT engagement. Taken together, these findings strongly suggest that prisoners' local decisions to engage in MMT are frequently independent of the therapy's benefits to prisoners with opioid dependence, and are instead heavily dependent on the social influence of the prisoner hierarchy that governs the prison environment.

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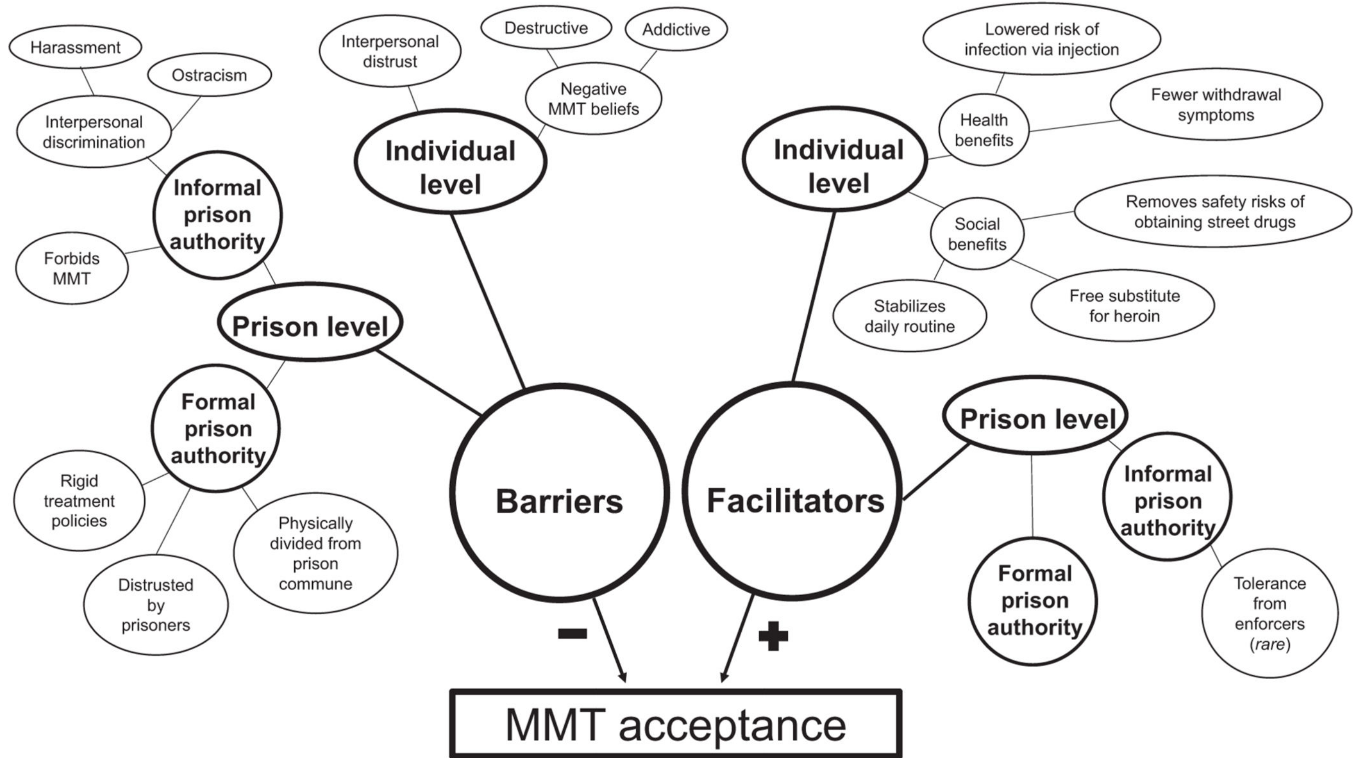

Fig. 1.

Prison-level and individual-level factors of MMT acceptance in the Moldovan prison environment.

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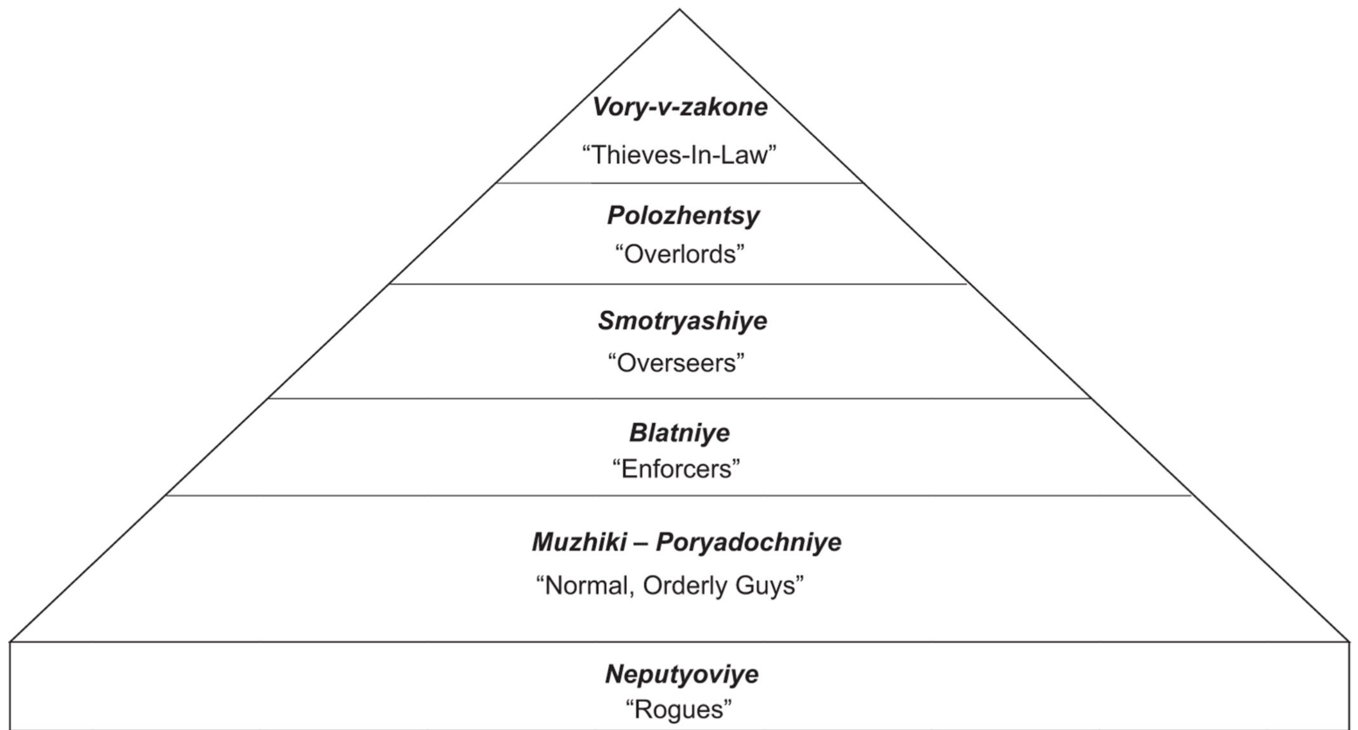

Fig. 2.
Social hierarchy of incarcerated individuals. Russian names for social castes are bolded and italicized; English translations appear in plain text within quotes directly below each name.

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Table 1

Attributed to each respondent: ID number; age; MMT experience while incarcerated; gender. Respondent IDs are listed in the order of their quotes' appearance in the text.

ID no.	Age	MMT experience	Gender
7	40	No MMT	Female
1121	30	No MMT	Male
2203	34	No MMT	Male
223	37	No MMT	Male
16	36	No MMT	Male
4	47	MMT	Male
1107	27	MMT	Male
1118	34	MMT	Female
3	36	No MMT	Male
1109	30	MMT	Male
124	33	MMT	Male
225	36	No MMT	Male
2110	36	No MMT	Male
2117	39	No MMT	Female
1114	33	MMT	Male
2200	48	No MMT	Male
18	31	MMT	Female
333	34	No MMT	Male
2120	33	No MMT	Male
221	45	No MMT	Male