Methadone Maintenance Treatment (MMT) for Drug-using Prisoners in Ghezel Hesar Prison, Karaj, Iran

A qualitative study

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Abstract

Objectives: This report describes the activities related to methadone maintenance treatment (MMT) and explores the attitudes/experiences of MMT users and providers in terms of its provision in Ghezel Hesar prison. It also explores barriers against the provision and further scale-up of MMT and acquires overall insight into MMT in Ghezel Hesar prison to design and implement the quantitative phase of this study.

Methods: This was a cross-sectional qualitative study using field observations, focus group discussions, and individual interviews. Overall, 30 prisoners and 15 prison staff and health policy makers participated in this study in November 2006.

Results: Almost all of the MMT recipients were satisfied with the program; however, we found unexpectedly high levels of concern over the side effects of methadone among both methadone recipients and those on the waiting list. The number of drug injections in the prison unit was unanimously reported to have decreased drastically since introducing the MMT program. Besides the health benefit to MMT recipients, the data showed that MMT has positively affected the financial situation and social well-being of the prisoners' families. Nevertheless, several impediments exist to the provision of MMT and its further scale-up. These barriers included staff shortages, physical limitations of the prison in improving the administration of methadone, the diversion of methadone, prevalent concerns over the possible side effects of methadone, and the stigma of being under methadone treatment.

Conclusions: MMT constitutes one of the main components of the Iran Prison Organization's comprehensive HIV prevention package and is becoming increasingly accessible to drug-using prisoners in Iran. Our findings indicate that the MMT program in Ghezel Hesar prison has been successful in helping many drug-using inmates reduce their risk of drug-related harm. Our findings also show that the MMT program has effects beyond those to the direct recipients of methadone because it also benefits the families of MMT recipients.

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Introduction

There is solid research evidence indicating that prisoners are at additional risk of human immunodeficiency virus (HIV) infection in the prison environment, especially those who use injected drugs (Pont *et al*., 1994; Dufour *et al*., 1996; Stark *et al*., 1997; Vanichseni *et al*., 2001; Beyrer, 2003; Buavirat *et al*., 2003; Thaisri *et al*., 2003; Macalino, 2004), and there have been several reports on HIV outbreaks among drug-injecting prisoners (Taylor *et al*., 1995; Dolan & Wodak, 1999).

It is also believed that several HIV outbreaks occurred inside prisons in Iran in the mid 1990s (UNAIDS, 2006; Kermanshah Province Prison Department, 1998). Several studies have reported the risk of HIV transmission in association with shared drug injection in Iranian prisons (Razzaghi *et al*., 2000; Razzaghi and Rahimi, 2005). In particular, there is evidence that sharing drug-injecting tools inside prisons is the main correlate of HIV-1 infection among injecting drug users in Iran (Zamani *et al*., 2005, 2006). The prison setting in Iran is also believed to be a risk environment for the transmission of other blood-borne infections, such as hepatitis C virus (Zamani, 2007).

Iran Prison Organization has faced several challenges in regards with HIV prevention intervention among prisoners since several years ago but it has successfully overcome with major issues. Some important reasons for this challenge have been the overcrowding of the prisoners and high rate of recidivism among the prison population in Iran, of which about half are drug users, and many of them use drugs through injection (Bolhari *et al.*, 2002). Data from the United Nations Office on Drugs and Crime (UNODC, 2002) indicate that a large number of people are being arrested and incarcerated for drug-related offenses in Iran. In addition, the Iran Prison Organization (2006) has reported that there is an average of 135,000 prisoners at any time in the 230 prisons and correctional settings in Iran. Although the average

number of prisoners has decreased in recent years, as many as 600,000 individuals entered and exited prisons during the 2004-2005 Iranian calendar year (Iran Prison Organization, 2006). The nature of this challenge is highlighted when we consider the limited physical capacity of the prisons for holding this number of prisoners, resulting in overcrowded prisons in many provinces. Moreover, prisons have a shortage of health and medical staff, which makes it more difficult to provide appropriate care for the large population of prisoners in Iran.

As a way of confronting the challenges associated with the transmission of blood-borne infections, particularly HIV infection, among injecting drug users (IDUs) and prisoners, authorities in the judiciary system and its Prison Organization subdivision have adopted and implemented comprehensive harm-reduction policies and practices for drug-using inmates. Accordingly, the Iran Prison Organization has started comprehensive HIV prevention interventions for drug-using inmates in many provinces throughout the country. The main activities include epidemiological surveillance, education programs, and prevention programs. Among HIV prevention interventions, methadone maintenance treatment (MMT) plays a key role inside prisons in Iran and is being expanded progressively (Iran Prison Organization, 2006). The number of clinics providing MMT inside prisons has increased continuously since this initiative began in 2002, as Figure 1 shows. There were, at time of investigation, 54 clinics inside prisons in 27 provinces that provide MMT to prisoners.

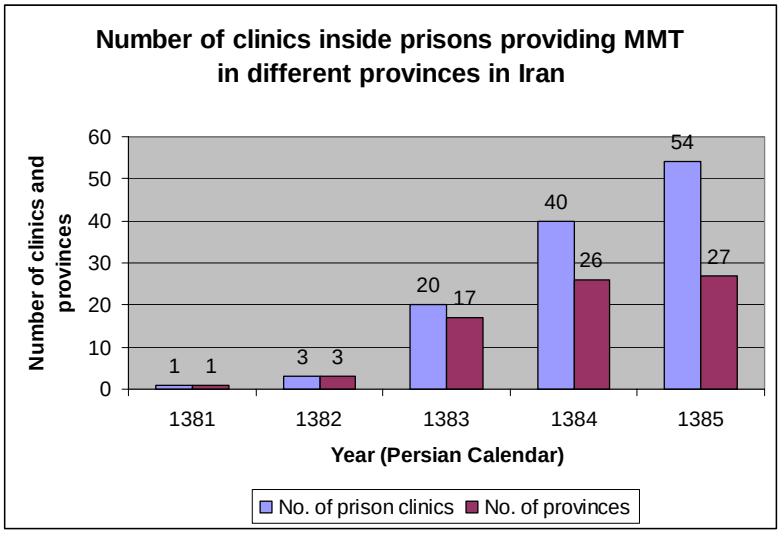

Figure 1. Number of clinics inside prisons providing MMT in different provinces in Iran

A report from the Iran Prison Organization also shows that the number of prisoners receiving MMT has been increasing steadily since 2002, when only 100 inmates received MMT. Notably, at the end of 2006, up to 4,200 prisoners were receiving MMT inside prisons in Iran.

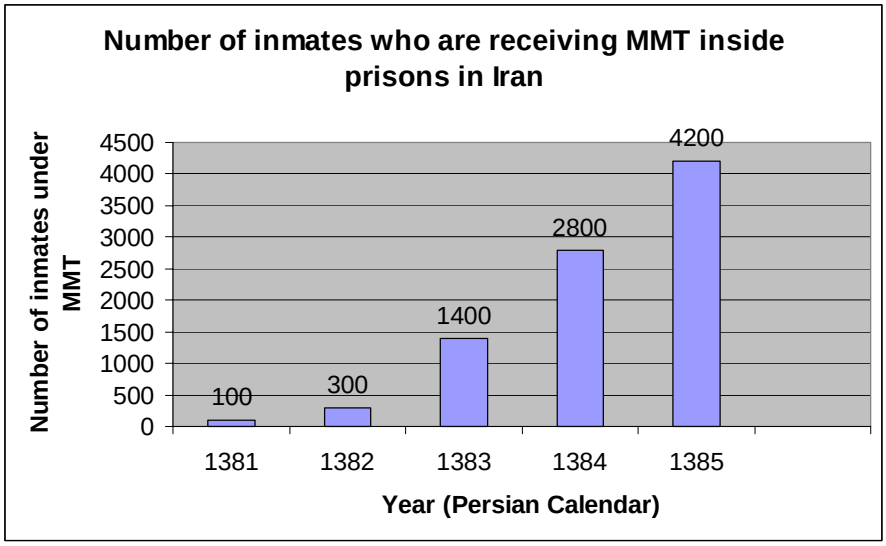

Figure 2. Number of inmates receiving MMT inside prisons in Iran

Methadone is a full agonist synthetic opioid and its maintenance treatment involves daily consumption of a prescribed dose of methadone, usually under supervision of a medical personnel, including a nurse. Substitution maintenance treatment with methadone is a well-researched intervention that is potentially effective at reducing or stopping drug injecting, resulting in an overall reduction in sharing practices among drug-using inmates (Gossop, 2001; Tomasino, 2001; Dolan, 2003; Farrel, 2005). In addition, MMT can prevent deaths due to overdose and reduces opioid use, violence inside prison, and re-incarceration (WHO/UNODC/UNAIDS, 2004; Dolan et al., 2005). Drug dependence treatment is a strategy to improve social wellbeing of people dependent on opioids and to reduce its related health and social consequences, including HIV infection (WHO/UNODC/UNAIDS, 2004).

This report is based on the findings of a qualitative inquiry conducted in November 2006 as a formative research for behavioral evaluation of MMT in Ghezel Hesar Prison, in Iran. The investigators contributing to this part of the evaluation tried to create a basis for a subsequent quantitative and behavioral evaluation, while exploring potential obstacles to the expansion of MMT in a correctional setting. The results of this qualitative study were intended to improve the provision of MMT in Ghezel Hesar prison, thereby reducing drug-related harm among drug-using inmates.

The specific objectives of this qualitative study were:

- To describe activities relating to MMT in Ghezel Hesar prison;
- To explore attitudes/experiences of MMT users and providers in terms of its provision in Ghezel Hesar prison;
- To explore barriers against the provision and further scaling up of MMT in Ghezel Hesar prison; and
- To acquire overall insight into MMT in Ghezel Hesar prison in order to design and implement the quantitative phase of the study.

Method

Design

The MMT program in Ghezel Hesar prison is to be evaluated through a longitudinal study incorporating both qualitative and quantitative methodologies. This preliminary phase of the study had a cross-sectional qualitative design using multiple sources of information.

Sampling method

As this qualitative study did not seek to generalize its findings, but to obtain a variety of observations on the provision of MMT and its utilization by incarcerated drug users in a prison setting, participants were recruited through purposive sampling. With this method, the sample units are chosen because they have particular features or characteristics that will enable detailed exploration and understanding of the central themes (Ritchie *et al*., 2004). The sample included a variety of incarcerated drug users, prison authorities, and care providers who have different views on the provision and utilization of MMT in Ghezel Hesar prison.

Inclusion criteria

- Incarcerated drug users on MMT
- Incarcerated drug users not on MMT
- Incarcerated drug users on a waiting list to receive MMT
- Health staff/policy makers engaged in MMT in Ghezel Hesar Prison

Exclusion criteria

- Those who failed to give informed consent
- Those who were not in good enough physical or mental condition for an interview

Potential participants were approached and recruited with the help of the medical staff of Ghezel Hesar prison. The research team attended Ghezel Hesar Prison and supervised screening of the eligible respondents. On accepting the initial invitation, the interviewers re-evaluated the eligibility of the invitees and then sought informed consent for their participation in an in-depth interview or focus group discussion.

Data collection

A number of sources and methods were used for data collection.

- Secondary analyses examined the available documents, such as reports by Ghezel Hesar Prison or the Iran Prison Organization, and research-based evidence;
- Ethnographic observation of the health facilities in Ghezel Hesar prison and the administration of MMT to the prisoners; and
- In-depth interviews and focus group discussions with MMT providers and receivers, prison authorities in Ghezel Hesar prison, and health policy makers regarding MMT.

The focus group discussions

To conduct focus group discussions among incarcerated drug users, a confidential room was identified in Ghezel Hesar prison with the permission of the authorities. The participants were seated in the interview room and the interviewers, Mr. Saman Zamani and Mr. Saman Tavakoli, explained the outline and purpose of the interview and told the participants that their participation was completely voluntary. The researchers also explained that the interview would be tape-recorded for analysis purposes. Then, informed consent was sought from each participant.

All interviews were conducted in Farsi, the official language in Iran. The focus group discussions started with a few general questions about the participants'

stay in the prison to make them ready for further discussion (warm-up phase) (Debus, 1988; Ulin *et al*., 2002). The specific topics of interest were then introduced using an interview guide based on the research themes (Annex I). Specifically, participants' attitudes and experiences about the provision and utilization of MMT were explored. While the participants were allowed to raise new topics relevant to the aims of the study, the interview was managed by the interviewer to ensure that the required subjects were covered to the required depth without influencing the actual views articulated (Legard *et al*., 2004). After all of the themes had been explored, the interview was ended, and the participants were thanked. Each participant was given refreshments (cake and juice) during the discussions, but no monetary incentive was given.

The face-to-face interviews

Prison staff and health policy makers were interviewed at either the Health Bureau of Ghezel Hesar prison or their offices. The aim and objectives of the study were explained and they were told that their interviews would be confidential. Most of the interviews were audio-recoded but, in a few cases, health policy makers answered several open-ended questions and their answers were documented by taking notes.

Data management

As explained, data were collected through focus group discussions with incarcerated drug users or through face-to-face semi-structured interviews with MMT providers or health policy makers. All interviews were tape recorded and then transcribed anonymously. The transcripts were entered into *Microsoft Word* data files in Persian and then into *Microsoft Excel* for further analysis.

Data analysis

Data analysis began after the first interview was completed in order to refine the research questions using the constant comparative method (Pope *et al*., 2000, 2001).

At least two focus group discussions among the main categories of incarcerated drug users (those on MMT, those on a waiting list to receive MMT, and those who did not apply for MMT) were conducted.

The analysis of this research was based on constructing a 'thematic framework' (Ritchie *et al*., 2004), which was used to classify and organize data according to key themes: concepts and emergent categories. There are five stages of data analysis using this approach (Pope *et al*., 2000, 2001), starting with *familiarization*, in which the tapes and transcripts were listened to and analyzed. After familiarization with the data, the researchers tried to identify key ideas and recurrent themes. To *identify a thematic framework*, the researchers tried to identify all of the key issues, concepts, and themes by which the data could be examined and referenced. This was carried out by drawing on *a priori* issues and questions derived from the aims and objectives of the study, as well as issues raised by the participating IDUs themselves and views or experiences that recurred in the data. At the *indexing* stage, the thematic framework or index was applied systematically to all of the data in textual form by annotating the transcripts with numerical codes from the index. Then, the researchers tried to rearrange the data according to the appropriate part of the thematic framework to which it related and constructed *charts* summarizing the views and experiences. The final stage was *mapping and interpretation*, in which the charts were used to define concepts, map the range and nature of phenomena, and find associations between themes with a view to explaining the findings. The process of mapping and interpretation was affected by the original research objectives, as well as by the themes that emerged from the data.

Ethical considerations

This study follows the International Guidelines for Ethical Review of Epidemiological Studies (CIOMS Geneva, 1991) and the declaration of Helsinki: Ethical Principles for Medical Research involving Human Subjects (World Medical

Association, Edinburgh, 2000). In addition, the study protocol was reviewed by the ethics committee of the Iran Prison Organization and, after incorporating the comments from the committee, permission was obtained from the Organization for this longitudinal investigation. UNODC, as the funding organization and owner of the data, shall keep the database.

In order to protect the rights of all participants:

- No identifiers were asked from the participants;
- In-depth interviews and focus group discussions were carried out in an environment that was as confidential as possible;
- Acceptance or refusal regarding participation in this study was not intended to interfere with the health/treatment care the participants may receive while in prison;
- All recorded tapes and data files were kept in locked shelves and computers with a password for their access; and
- There was no invasive procedure during this study.

Informed consent

All of the incarcerated participants were required to give informed consent before the interview (Annex II). They were informed about the strict confidentiality of the study, the importance of their participation, and the voluntary nature of their participation. It was explained that the data collected through this study would be used for research purposes only and for nothing else.

Setting

Ghezel Hesar prison, located in Karaj District near Tehran, is one of the six prisons in Tehran Province. Ghezel Hesar is the largest of the 230 prisons and correctional facilities in Iran and is believed to be one the largest prisons in the Middle East. Ghezel Hesar hosts an estimated 11,000 male prisoners at any time, but the numbers

fluctuate between 10,000 and 13,000. The majority of the prisoners have been convicted of drug-related offences. According to an estimate by the Iran Prison Organization in April 2007, there were about 147,000 prisoners in Iran. Therefore, Ghezel Hesar prison hosts about 7-9% of all incarcerated people in Iran. Similar to other prisons in Iran, the recidivism rate in Ghezel Hesar is high, and it is estimated that 250-300 people enter and exit Ghezel Hesar every day. Since Ghezel Hesar Prison is a referral prison for drug-related matters, at the time of the study it was believed to hold at least 1500 out of the total of 13,000 inmates at direct risk of acquiring HIV because of risky drug taking behaviors.

The large compound of Ghezel Hesar includes five main units holding male prisoners only, and categorized according to the crimes for which they were convicted. Units one, four, and eight hold only prisoners convicted of drug-related charges. In unit two, the majority of inmates are there because of drug-related issues, although there are some prisoners on general charges. Unit three, the largest unit in Ghezel Hesar, holds only prisoners convicted on general charges, rather than illicit drug offences. The number of prisoners in each unit of Ghezel Hesar at the time of the study is shown in Table 1. There are also some smaller units in Ghezel Hesar, such as a quarantine section that holds new entrants who stay there for 48 hours before being sent to the main units. The approximately 300 prisoners who are allowed to work in the prison compound stay in Unit six.

Table 1. The number of prisoners in each unit of Ghezel Hesar Prison in November 2006

Unit Number	Categories of crime	Population
1	Drug-related charges	2487
2	Mostly drug-related (mainly drug trafficking), but some general heavy charges	1473
3	General charges	2134
4	Drug-related charges- Working unit	1172
6	Domestic Services (prison cleaners, kitchen workers, etc.)	300-350
8	Drug-related charges (minor charges; short stays)	1803
Quarantine	Various charges	About 200-300

Results

Sample characteristics

Drug-using prisoners

In all, 30 prisoners, including three assistants for MMT administration, participated in seven focus group discussions conducted inside Ghezel Hesar Prison during November 2006. As mentioned earlier, the prisoners were first approached by the health manager of the prison block for recruitment and then the interviewers explained the objectives of the research and confidentiality issues fully. A 27-year-old male prisoner who initially responded positively to the health manager for recruitment in the study, declined to participate in a focus group discussion after being comprehensively informed about the research objectives and that his participation was voluntary

Table 2 shows background characteristics of the prisoners (excluding MMT assistants) who participated in focus group discussions in Ghezel Hesar Prison. All of the participants were male, as no females are held in Ghezel Hesar Prison. The median age of the participants was 38.0 years. Most of them (17 participants) were married, less than one fifth (5 participants) had never married, and the rest were either divorced or widowers at the time of the study. The participants had a diverse educational background and half of them (13 participants) were educated up to the junior high school level. Four participants reached high school level or even entered a college, while seven participants attended elementary school only, and three never attended a school. With the exception of one Afghan participant who was a follower of Sunni Islam, the remaining participants were Iranian nationals who were all followers of Shia Islam (Table 2).

All of the participants, except one young participant, had a job or profession before entering Ghezel Hesar Prison; many of them were technicians or drivers. The median length of the participants' stay in the Ghezel Hesar Prison was 27.0 months.

Excluding four participants with life sentences, the median length of the remaining term was 19 months. More than one third of the participants (10 people) had been on MMT for a median length of 5.5 months at the time of the study.

Table 2. Background characteristics of the prisoners (excluding MMT assistants) who participated in focus group discussions in Ghezel Hesar Prison in 2006.

Gender	Age (years)	Marital status	Education	Religion	Nationality	Job before incarceration	Time in GHP	Length of sentence remaining	Ever received MMT	Length of time on MMT
M	37	Married	High school	Islam Shia	Iranian	Technician	92 months	Life sentence	No	-
M	38	Married	Elementary	Islam Shia	Iranian	Mechanic	24 months	6 months	No	-
M	48	Married	Junior high school	Islam Shia	Iranian	Watch repairman	60 months	276 months	No	-
M	42	Married	Junior high school	Islam Shia	Iranian	Fruit retailer	14 months	59 months	No	-
M	45	Widowed	Elementary	Islam Shia	Iranian	Well evacuating	6 months	30 months	No	-
M	28	Married	Junior high school	Islam Shia	Iranian	Bricklayer	84 months	84 months	No	-
M	44	Married	Elementary	Islam Shia	Iranian	Cassette tape distributor	12 months	24 months	No	-
M	38	Married	Diploma	Islam Shia	Iranian	Food product distributor	12 months	120 months	No	-
M	28	Single	Junior high school	Islam Shia	Iranian	Inlayer	12 months	Life sentence	No	-
M	30	Single	Elementary	Islam Shia	Iranian	Technician	14 months	4 months	No	-
M	38	Married	Diploma	Islam Shia	Iranian	Accounting	5 months	19 months	No	-
M	43	Married	Junior high school	Islam Shia	Iranian	Technician	4 months	8 months	No	-
M	31	Married	Junior high school	Islam Shia	Iranian	Spinning	19 months	6 months	No	-

Gender	Age (years)	Marital status	Education	Religion	Nationality	Job before incarceration	Time in GHP	Length of sentence remaining	Ever received MMT	Length of time on MMT
M	26	Single	Junior high school	Islam Shia	Iranian	Jobless	14 months	10 months	No	-
M	45	Married	Read and write	Islam Shia	Iranian	Unskilled worker	27 months	11 months	No	-
M	35	Married	Illiterate	Islam Sunni	Afghan	Unskilled worker	16 months	60 months	No	-
M	30	Single	Junior high school	Islam Shia	Iranian	Real estate	84 months	Life sentence	No	-
M	31	Divorced	Elementary	Islam Shia	Iranian	Carpenter	120 months	36 months	Yes	3 months
M	44	Married	Junior high school	Islam Shia	Iranian	Driver	26 months	14 months	Yes	4 months
M	41	Married	Read and write	Islam Shia	Iranian	Driver	84 months	30 months	Yes	5 months
M	42	Married	College	Islam Shia	Iranian	Pharmacist	48 months	Life sentence	Yes	5 months
M	47	Married	Elementary	Islam Shia	Iranian	Optician	72 months	108 months	Yes	1.5 months
M	50	Married	Junior high school	Islam Shia	Iranian	Driver	120 months	18 months	Yes	10 months
M	44	Divorced	Elementary	Islam Shia	Iranian	Driver	72 months	72 months	Yes	6 months
M	30	Single	Junior high school	Islam Shia	Iranian	Shoe maker	66 months	3 months	Yes	12 months
M	35	About to d ivorce	Junior high school	Islam Shia	Iranian	Tailor	42 months	Complete	Yes	7 months
M	35	Divorced	Junior high school	Islam Shia	Iranian	Butcher	36 months	12 months	Yes	6 months
M	27	Refused to take part into focus group discussion								

Prison staff and health policy makers

In all, 15 prison staff or health policy makers were interviewed. Of these, three psychologists participated in one focus group discussion in Ghezel Hesar Prison and the other prison staff or health policy makers were interviewed at either the prison Health Bureau or their own offices.

This section is concerned with five main issues related to the effects of MMT on the prisoners' health and wellbeing in the existing context of the Ghezel Hesar Prison:

1. Access to and use of illicit drugs by prisoners;
2. Access to and utilization of treatment services for drug use in the prison;
3. The MMT program
4. Perceived impacts of MMT on the health of drug-using prisoners;
5. Perceived impacts of MMT on the access to and use of illicit drugs in the prison; and
6. Obstacles to the provision of MMT in the prison.

Access to and use of illicit drugs by prisoners

In the prison block where this qualitative study was conducted, the general perception was that different kinds of drugs were available, and that the most available drug was called "crack" (crack heroin that has been marketed in Iran for a few years). The respondents reported that drugs were generally more accessible, before introduction of MMT program and that they had better accommodations inside prison than in the outside community. While the quality of drugs obtained in the prison was considered the same as that of drugs marketed outside the prison, and was deemed acceptable by the majority of the participants (acceptability), the high price of drugs inside prison, where they were 5-8 times more expensive than outside, was reported to be a concern (affordability).

Prisoner 1-They [drugs] are much more expensive inside prison, but can be obtained much more easily than outside. You know, if you want to buy, for example, one gram of Crack [Heroin] or Heroin outside prison, and then you need to walk four streets or four alleys.
Prisoner 2- You should go at least two stations farther.
Prisoner 3- If you want to get drugs outside [of prison], you have to search for them; if you drop by the guy's [dealer] home late at night, he will swear at you! But here, you can get drugs whenever you wish; you won't have to wait. The only thing is the high price.

Consequently, prisoners have to spend more of their money, which comes mainly from their families, to buy drugs. This not only reduces what they can spend on food, it can also affect their drug use pattern inside prison, especially for those inmates who cannot afford the high price of the drugs. While the high price of drugs inside prison may result in less frequent use among underprivileged prisoners, it may increase the likelihood that they will shift to injecting drugs as the most cost-efficient way of using drugs.

MMT Assistant: When [a prisoner] wants to use a tiny amount of Heroin or crack [Heroin] which have recently become available in the prison, he cannot afford to buy enough to smoke it. Therefore, he pours it in a spoon and boils it and aspirates it into a pump [a hand-assembled injecting device] along with 2-3 other people and injects it into a vein. He thinks this will keep him right for about 10 hours. It is not like this outside [of prison].

Consequently, it is quite common for prisoners to demand yet more money from their families. This can impose a great financial burden on the family of a prisoner who is often the family breadwinner. The drug-using prisoners urge their parents and wives to give them more money to cover the extremely high cost of drugs inside prison.

Prisoner- I'm talking about myself; during the seven years I have been in this prison, my wife and kids have not spent as much money as I have in paying for drugs! Sometimes I call them for money and they reply, "For the 50,000 [toomans] you take, we only spend 10,000! What are you doing in there?" Then, I have to lie to them!! I don't say that I am spending it on drugs; I say that there is no bread here, and I have to buy three loaves of bread for 10,000 toomans! I buy one canned fish for 5,000 toomans! I get the money for this.

Prisoner- I should speak in general terms; for example, this gentleman here and I are being held in this prison, but we are not the ones who are penalized; our unfortunate families are being penalized! With this inflationary situation, if our families remit 20,000 toomans a week, it makes it very difficult for them to function outside [of prison]. How much can we expect one person to earn outside [of prison] or how much salary can a person receive? With 100-150 thousand toomans, she has to pay me 30, 40, or even 50 thousand [toomans] so that I can eat here and use drugs! So, what can they do outside [of prison]? So, you can see that we are not the ones who are penalized; fathers, mothers, and siblings, they are the ones who are really serving this sentence. We are here day and night eating, sleeping, and using drugs, so I cannot say we are serving this sentence.

Financial support from families to cover drug use-related expenses may not be feasible for many, especially for underprivileged families and those families for whom release of their incarcerated family member is some time away. This may contribute to other social issues, such as putting marriages under pressure, which may lead to divorce.

Prisoner 1- Some guys beg; some get angry with their families in order to get money!
Facilitator- For drugs?
Prisoner 1-Yes, for drugs
Prisoner 2- Doctor, with my own eyes, I saw a guy who was talking with his wife over

the phone telling her, "I don't care how you do it, just go and get this money!" I was just standing behind him! He was asking his wife to get and remit the money in whatever way she could.
Prisoner 1- I apologize for my rudeness, but you can understand what this means!
Prisoner 3- In my opinion, some families have ended in divorce because of these problems; they have abandoned him because they didn't have [money] to remit after they saw that he [their husband or son] was addicted! However, if this methadone program begins, many of these problems will be removed from the shoulders of families' and everyone else.
Facilitator- Do you know any one personally who has divorced because of …
Prisoner 3- Yes I do.

Access to and utilization of treatment services for drug use in the prison

The Heath Bureau is responsible for providing the health and treatment needs of the prisoners in Ghezel Hesar Prison. The health and treatment personnel of Ghezel Hesar Prison include 26 general physicians, 11 part-time specialty physicians, 2 dentists, 4 health officers, 18 nurses, 3 psychologists, and 20 other paramedics.

The prevention and treatment of drug misuse is one of the responsibilities of the Health Bureau, along with many other responsibilities, including the prevention and control of infectious diseases, supervision to ensure hygiene in food preparation and delivery, improving the hygiene of the prison environment, provision of educational activities, and medical treatment for illnesses or referral to external hospitals.

Health and treatment services are provided through health units, which are located inside each prison block, as well as through one specialized clinic and one counseling center for behavioral illnesses. The latter center is a kind of Triangular clinic similar to the same named centers in the community, except that it serves the prisoners only. Like those in the community, the Triangular clinic in Ghezel Hesar

Prison provides integrated services to people infected with HIV/AIDS as well as services for the drug-related problems of drug users. Specific services for drug users visiting the Triangular clinic include education programs, individual and group psychological counseling for prisoners and sometimes for their families, MMT and drug detoxification using naltrexone.

The MMT program

The MMT program was initially started in 2003 as a pilot study financially supported by the United Nations Office on Drugs and Crime (UNODC) Iran involving 50 participants in Unit No. 2 of Ghezel Hesar prison. The pilot activity was technically supported and supervised by the Tehran Psychiatric Institute and consisted of the initial training of staff, the provision of psychosocial interventions, and continuous supervision of the interventions being carried out. This pilot MMT program in Ghezel Hesar prison has led to very promising results in terms of reducing high-risk behaviors and improving the well-being of ex-drug-using inmates at that time (Bolhari *et al*., 2004)

After being evaluated as a feasible and beneficial program, the provision of MMT was moved from Unit No. 2 to Unit No. 1 of the same prison because the latter was thought to contain more drug users with high-risk behaviors and was considered a more feasible setting for the provision of MMT. MMT was launched in one of the most at-risk blocks in Unit 1, where many injecting-drug users were held before introducing MMT. The program then expanded continuously in Unit 1 to cover an increasing number of drug-using inmates. At the time of data collection (November 2006), 968 prisoners in Ghezel Hesar prison were receiving MMT from the health staff. In addition, about 100 others had started MMT inside the prison, but were released when their sentences were completed.

The team for provision of MMT in Ghezel Hesar prison consists of three general practitioners (the physician responsible for Unit 1 supervised and supported by two senior physicians), two clinical psychologists, four nurses supervised by a head nurse, and a health technologist. The team is assisted by three recovered inmates who act as MMT assistants supporting nurses who dispense methadone to the inmates. Based on needs, inmates can be referred to specialists, such as psychiatrists or infectious disease specialists. The MMT team mainly received its training while preparing for the pilot MMT program. Staff who joined the program later learned the details of MMT provision by engaging in daily activities, rather than through formal training. The health staff of Ghezel Hesar prison now welcomes further training to improve the quality of service provision.

Any drug-using prisoner who wants to receive methadone must first submit a written request to the health unit. Then, the health unit refers the applicant to its clinical psychologist to be interviewed and evaluated for receiving methadone. The clinical psychologist asks several questions, including socio-demographics, history of drug use and injection, and history of being treated for drug use. Originally, it was decided to include as many IDUs as possible in the MMT program; however, on expansion of the program, there were more opportunities for non-injecting opioid users who were considered at risk of HIV infection to receive methadone. Therefore, through the course of the MMT program, the eligibility criteria expanded from being an HIV-positive IDU at the very beginning of the program to being known as an IDU, and now to being opioid dependent and being evaluated as at risk of HIV by a general practitioner. If a drug-using inmate is deemed eligible to receive MMT, he is placed on a waiting list and waits his turn. This process may take a few days to a few months based on the capacity of the Health Bureau and the managing authorities. Drug users with an HIV positive status and injecting behavior are still prioritized and wait less for entering into the MMT program. Also in cases of commercial sex work (which is significantly underreported) the waiting time is shorter. Drug users who are

HIV-positive and still inject are prioritized and have a shorter wait before entering the MMT program. In addition, commercial sex workers, who are significantly underreported, have shorter waits. At the time of the investigation (November 2006), over 700 drug users had registered to receive MMT, but had not yet received methadone.

At the start of MMT for a drug-using prisoner, he is assessed clinically by a physician who decides the initial induction dose. Then, over the next days and weeks, the physician increases the dose of methadone gradually and assesses the prisoner's progress clinically. When he becomes stabilized, the methadone syrup is administered by an assistant (who is a qualified and trusted prisoner) under direct supervision of a nurse. The average maintenance dose of methadone is about 100 mg a day. The Iran Prison Organization has prepared a protocol for MMT in the penitentiary setting, but this does not consider all practical issues and is not followed strictly. Those on MMT can also benefit from counseling programs inside prison. Due to time constraints, work overload on staff, and the increasing number of prisoners starting MMT, the amount of education before initiating MMT and other psychosocial interventions has decreased compared to the pilot study on MMT.

The MMT recipients are organized into groups of 15, and one of the group serves as the group co-coordinator. Every morning, the group presents in order at the front of a room with a barred-window facing their ward. Each member of the group first puts a finger stamp in front of his name on a piece of paper and then he is given his allocated dose. After this, he needs to say something like "I have taken it" or "Thanks" to indicate that he has swallowed the syrup. Despite all efforts, some level of diversion still exists, partly due to the shortage of staff. However, some of this diversion seems very difficult to avoid. Prisoners even seem to trade methadone that has been spat up or vomited.

The aftercare constitutes a substantial problem as no referral system is in place; inmates are simply introduced to MMT centers in the community. In Tehran, these are mainly centers run by non-governmental organizations (NGOs), while in other provinces, some centers are run by the State Welfare Organization. Most inmates cannot afford private services. Although a private center in Karaj provides services at less than the usual rate, it is still too expensive for many ex-prisoners. The MMT team does not have a list of MMT services throughout the country. Letters of introduction are addressed to those centers known to the MMT team. Moreover, MMT services are not available throughout Iran and the great distance and overloaded programs with long waiting lists pose a major obstacle to continued treatment upon release. Inmates are encouraged to continue the MMT program after release from prison; however, in identified cases, in which the risk of relapse into drug use appears to be minimal, detoxification is carried out before release at the personal request of the inmate.

Perceived impacts of MMT on the health of drug-using prisoners

Both drug-using prisoners who were receiving MMT and practitioners in Ghezel Hesar Prison reported that MMT had a number of health benefits for incarcerated drug users. All of those who were on MMT were happy to receive it. Methadone maintenance has reportedly contributed to their improved physical and mental health. Indirectly, this has translated into a substantial reduction in the number of prisoners with abscesses and infections presenting for medical attention. The participants have reported that they were very happy to be off drugs and that their general health has improved. The participants reported that they were very happy being off drugs and that their general health had improved.

Prisoner- I was even wondering whether I would survive, my body weight had fallen to 53 kilos! I am 193 centimeters tall and I am [usually] 81-82 kilos, but I had reached 52-53 kilos! It was all because of Crack [Heroin]; I was using 2 grams a day! But since I entered this methadone program, I feel that I have been born again! I always

pray for those who planned this program and those who have introduced it into prison.

As was intended, MMT reportedly had a great impact in reducing drug injection and sharing practices among injecting drug users receiving MMT inside Ghezel Hesar Prison.

Prisoner- I was an injector outside and after entering [this prison]; I was an "injector"! Now I have been in the methadone program for 6 or 7 months, and I have abandoned [injection]! I don't do it anymore. In the past 6-7 months, I have only used drugs 3-4 times, and aim to use them never again. I am very happy that I am in this program and receiving methadone. It is true that I have lost my life; I have lost everything, but I am happy that I have stopped injecting and that I am taking methadone.

Methadone also seems to have helped to improve the mental wellbeing of drug-using inmates. The inmates participating in MMT outlined how their mental status has changed after being treated with methadone for a while, and they reported that they have more hope for the future, especially for when they are released from prison.

Prisoner- Now, my view of life has changed and I see the world as more beautiful. It was not like this before; I wanted to die before, but not now! Now I want to live my life; now I want to complete my sentence and go back to my child; perhaps I can convince his mother to live with me again. This is the effect methadone has had on me; I've become very positive!

The side effects of MMT reported by those receiving the treatment do not seem to be major problems, although they have caused serious concern for both prisoners under treatment and those who have registered and are on a waiting list to receive MMT.

Prisoner- In the morning around 10:00 or 10:30 they bring us methadone from the health department. This takes about 1-1.5 hours. Then, the methadone, I apologize [for what I am saying], affects my body, and I cannot defecate for 10 days to two weeks. I mean that the methadone has this effect on the body. It would be very good for our health if we could have one or two glasses of milk a week.

The physician who supervises the MMT for prisoners in Ghezel Hesar Prison also pointed to the problem of constipation.

Interviewer- Have you encountered any side effects of methadone during the last two years?
Physician- Yes. You know, their main problem is constipation, but they cope with it. At the beginning, it bothers them, but they get used to it after a while. We also provide MOM syrup, but they must come and drink it under our supervision. Sometimes we even give them Bisacodyl. In few cases, we had to give lactulose! But, ultimately, they cope with it. The other side effects I should mention are laryngitis and occasional cases of arthritis. I don't recall any other special problems.

There were contrasting views on the effects of MMT on sexual health. While some of the participants described their sexual desire and sexual health as similar to before MMT, others expressed concerns over the negative impact of MMT on their sexual desire and sexual activity.

Prisoner- I am already 35 years old. You know sometimes you remember things. For example, lying on my bed, I remember the nights I had sex with my wife. Well, a man's sexual organ can be stimulated, of course! But now it is not like that for me. Even if you think about sex, you cannot do that [masturbate]. I mean, it [methadone] has reduced my sexual ability.

Conversely, those receiving MMT are less likely to be forced to sell sex to other male

prisoners in exchange for drugs.

Prisoner- This methadone program is a really good thing. I pray for them [those who contributed to it]. It has saved many lives. Many families were about to be disrupted, but it has helped avoid problems for them. Many of the young prisoners were forced to sell sex just to get drugs. But after receiving methadone, I know many of them who have been able to avoid this situation.

There were many accounts of how MMT had alleviated the financial strain on drug-using prisoners and on their families. As mentioned above, the great expense of illicit drugs inside prison made drug-using inmates try to force their families to provide them with money over a long period of time. Those drug-using prisoners who have received MMT do not need to ask their families to remit money now. Consequently, the heavy financial burden on such prisoners' families has been lifted, thus helping to avoid a number of social consequences, such as divorce.

Prisoner- It [MMT] has resulted in so many changes; because of my addiction, I used to force my family to visit me every week by telling them I was in debt! But now I am taking methadone, I can just call them and, when they call me, I ask only about how they are doing! My family is aware that something has happened and they say, "Hey, you used to ask for money all the time, but not anymore". Well, now I am taking methadone and not doing drugs anymore. My family understands.

Prisoner- I used to pay 250 to 300 thousand toomans every three days! I swear to God, I was receiving 300 thousand toomans every three days! But now I don't have to lie; when my family asks why I am not calling, I tell them that I don't need money. Even when they visit me, I don't ask them for money or specify an amount; they just give me whatever they can afford.

Perceived impacts of MMT on the access to and use of illicit drugs in the prison

After the introduction of MMT in Ghezel Hesar prison, there were some general changes in drug access and use among drug-using prisoners in the blocks of Ghezel Hesar prison. One of the most striking changes was an overall reduction in injecting drug use in Unit No. 1 of Ghezel Hesar prison.

Prisoner 1- Since this methadone program has started, I swear to God, I know 20-30 of my acquaintances who were injectors and in very bad shape; two of them were even about to die! But since methadone has come, thank God, they have abandoned [injecting].
Prisoner 2- They can even save money!
Facilitator- Were you here before the methadone program started?
Prisoner 1- Yes, I have been here in Unit 1 for two years
Prisoner 2- You can compare Unit 2 [without MMT] and Unit 1 [with MMT]; they are totally different.
Prisoner 1- We had a block here called the "Pumping Block" [where many people used to inject drugs with hand-assembled devices called pump]! We don't have a block with that label anymore. When we used to enter that Block, there were small fires and injecting materials. Since the methadone program has started, I have not seen any of this. Although people say that there are still some injectors, I have not seen any.

The general impact of MMT on drug injection has also been reported on by the Unit Manager who supervises all issues related to prisoners in Unit 1.

Prison staff- When any of the cell blocks were visited, there were significant numbers of people who were injectors; they were injecting with different tools and equipment, mainly handmade, and it was widespread in all the cell blocks of Unit No. 1… If we look at it from the perspective of general health and medicine, implementation of this program [methadone maintenance treatment] has meant that we do not see injecting tools to the same extent anymore; I can't say there aren't any at all, but their use has been reduced significantly; we have treated over 90% [of the drug injectors] with methadone.

While MMT has helped to ease the financial burden on drug-using prisoners and on their families, who were forced to support their imprisoned family member financially so that he could buy illicit drugs, it has not had a substantial impact on the drug market inside Ghezel Hesar Prison. There are still many drug-using prisoners in Unit No. 1 who are not willing to be treated with methadone or who are on a waiting list to receive it. In addition, MMT has only recently been introduced to Unit No. 1 and there are several other units where MMT has not yet started. These drug-using prisoners who are not receiving MMT are a potentially lucrative market for the drug dealers.

Interviewer-Do you think those drug dealers in prison will try to oppose this program?
Prison staff- No, I don't think so. Because, you know, those drugs have their own clients; those people are not yet involved in methadone. I mean, some people are using methadone, but others are addicts of different drugs or don't like methadone and don't pay any attention to it. So, there are clients for both [methadone and illicit drugs].

Although the drug dealers were not happy about the scale of MMT in Unit No. 1, they have found a way to get along with the MMT program; this is because there are those who cannot or do not want to be treated by methadone maintenance.

Facilitator-You mentioned that the methadone program has caused the unit to become more crowded, but are there any other problems that the methadone program has caused for you?
Prisoner- I'm a Crack [Crack Heroin] dealer. I both use and sell it. I tend not to have any visitors; I need to cover my expenses by selling Crack. You are saying that Crack causes many problems. For example, there was a guy who wore a pair of shoes that cost 100,000 toomans, but he was happy to exchange his shoes for just one pack [of Crack]! He was in so much pain. I am a dealer and I am not happy with the methadone program! I won't get out of here soon and can't use things like methadone myself …Methadone has affected us as dealers, but we are generally OK!

Obstacles to the provision of MMT in the prison

Although the authorities of Ghezel Hesar Prison have succeeded in implementing the MMT program and scaling it up to cover about 1000 drug-using prisoners, they have not had a an easy start to the program. Even now, they face several challenges that need to be overcome in order to continue the program in the prison. The following, although not exhaustive, are among the most commonly expressed challenges to implementing and scaling up the MMT in Ghezel Hesar Prison.

Shortage of health staff

One of the main challenges to providing the MMT program inside Ghezel Hesar Prison is the shortage of health staff. The importance of this shortage may be highlighted by considering that about 1,000 prisoners have already received MMT, but that there are hundreds on a waiting list to receive it. There is strong demand from the prison health policy makers to increase the coverage of MMT for drug-using prisoners, but this, in turn, might be in conflict with the quality of care that the Health Bureau aims to provide for drug users in the prison.

> *Health staff -There are occasions when personnel do not show up. This has happened in the past, and we could not find anyone qualified to perform this task [give methadone]. In this situation, I had to do it myself. These are the kinds of problems that prevent us from covering everyone in the way we would really like. For example, we planned to start [MMT] in Unit 6, but we don't have anyone to run it. I have asked one of our colleagues who has another job to do this task [give methadone]. It works well when the number [of people receiving MMT] is low; he can go to the Unit and finish the job within 30-60 minutes and then come back and continue his main job. However, when the number [of people receiving MMT] increases, this would lead to too much of a conflict; therefore, we need specific personnel for this job. These are the kinds of problems that limit our work.*

Another health staff - We have a severe shortage of personnel for this purpose; if we want to give methadone to a large number [of prisoners], and if we are concerned about positive results, then we must find the required personnel.

The shortage of personnel is not confined to nurses who supervise the methadone intake of the prisoners; it also affects the provision of psychological care to the prisoners who receive MMT.

Health staff - There are two psychologists who provide psychological care for these people [under MMT]. One of our main problems is that these psychologists are intended for the population of the entire unit, and not just for those receiving MMT! They must provide care for the entire unit and we cannot expect them to use all of their time for this [methadone].

Physical limitations of the prison for the proper provision of MMT

As with many other preventive interventions, the implementation of MMT in a correctional setting such as Ghezel Hesar prison and the provision of methadone for drug-using prisoners on a daily basis, under the supervision of health staff, is a real challenge for both the medical staff and prison managers. As explained earlier, about 1000 prisoners have been receiving methadone and they need to take their medication under the supervision of a nurse every day. However, the physical limitation of the prison units on the one hand, and the overcrowding of the units on the other, has made quality provision of MMT a real challenge.

Health policy maker - The physical environment is one of our major problems, but it applies to any other intervention program inside prison; prisons are overcrowded far beyond their capacities, which complicates any new program being implemented.

Another issue that is related to the physical environment of Ghezel Hesar prison is that every unit block where MMT is to be implemented requires

construction of a special room with a barred window before MMT can be implemented in that unit block. As not all of the unit blocks have this special room for the MMT program, the prison authorities have had to transfer those prisoners eligible for MMT to Blocks 1 or 5, where MMT is available. In addition, those who do not want to receive MMT have to leave their original block, where many of them have beds, and are moved to other units without a MMT program, where they need to wait for a vacant bed. Although this might not seem to be a big deal, having a bed and not losing it is an important issue for a prisoner who has to stay in prison for years. Consequently, some of the prisoners may register to receive MMT not because of their opioid addiction, but for fear of losing their bed and a fixed place in their unit block.

> *Health staff - One of the worst things for a prisoner is to have to transfer to another block. Consider the current situation, where there are 350-400 beds available for up to 500 people. Where do the other 100 people sleep? They have to sleep on the floor or even in a corridor! We have these problems. Imagine the reaction of a prisoner from block number 6 where he has a bed, a fixed place, and his own space, when he hears he has to be transferred to block number 2, where he will probably sleep on the floor. …This person feels that his bed belongs to him, and when he feels he may lose it, he tries to find a way to prevent it. Well, if they think that they must take methadone if they want to stay in their unit, then they will register to receive methadone.*

Diversion of methadone

Although the MMT program started in Ghezel Hesar prison as a research-based program with considerable supervision of the therapeutic use of methadone by registered prisoners, the rapid scaling up of the program to include increasing numbers of eligible drug-using prisoners with the help of limited personnel has resulted in less strict supervision of the use of methadone. Consequently, there have been several accounts from different sources indicating that the level of methadone diversion is rather high.

Prison staff- We really want to ensure that the supervisory mechanism prevents diversion, but we know that there are some prisoners who might be under financial strain and, although they take [methadone] in front of a nurse, when he leaves, the prisoner can spit it out and then sell it or exchange it for a cigarette. Such cases have been reported.

Prisoner- When a guy goes to take methadone, he may skip taking it completely. Well, the Doctor cannot [supervise properly]; how can he check whether all 500 people have taken [their methadone]; one or two can skip it!
Another prisoner- Sometimes they don't even take the methadone into their mouths!
Prisoner - Sometimes, I look carefully to check that people do not take the methadone into their mouths! But it is not always like this, and one cannot be sure. It is God's will; I have not got sick so far! Well, I have been taking [diverted methadone] for about 20 days or a month and, thank God, nothing [bad] has happened to me so far!

Prevalent concerns over the side effects of methadone

There were many accounts of concerns about the possible side effects of methadone among recipients and non-recipients of MMT. The level of concern regarding side effects of methadone was much higher among those drug-using prisoners who have not yet received MMT, but are registered to be treated with MMT.

Prisoner 1- Doctor, there are several rumors about methadone; some people say it damages the liver. Many people are still afraid of that.
Prisoner 2- Many people are afraid to take that [methadone].
Prisoner 3- But these stories involve people outside our Unit [where MMT is available]; and they say that they have heard this from doctors in the Health Bureau, but I don't believe them.
Prisoner 1- Some people are really scared about the side effects of methadone!

A prisoner on waiting list- I know a guy who is taking methadone and his appearance has changed badly. In a Unit Block here, out of the 400-500 people, only 100 have visitors, which means that they are well off. But some people are on methadone [treatment] and should drink milk and such, but they can't and their faces turn yellow because they have no visitors and no money to buy these things. On the other hand, those who are on methadone and have visitors can buy many things and they look very healthy. My point is that we don't know its disadvantages and harmful effects; no one explained what could happen to us if we take it [methadone], or what happens if we don't take it.

Another prisoner on waiting list- There are many rumors in Unit No. 1 that it [methadone] can damage the liver. I have not seen this happen, but people say that it damages the liver.

Stigma of receiving MMT

There were several accounts from prisoners receiving MMT that other prisoners or even prison staff stigmatizes those receiving MMT. This stigma might be attributed to the original inclusion criteria for receiving MMT, *i.e*., being HIV infected and subsequently being either HIV infected or an injecting drug user, many of whom are financially unprivileged. There were some additional accounts implying that the stigma against MMT might be attributed to the special attention paid to young prisoners who have been selling sex for drugs in Ghezel Hesar Prison.

Prisoner 1- Doctor, there is another issue concerning methadone; other people view us differently.
Facilitator- What do you mean by view differently?
Prisoner 2- For example, fellows think that [people receiving MMT] are extremely poor or, I apologize for saying this, are junkies [lasshi]!
Prisoner 3- Yes, lasshi.
Prisoner 2- Or sick, Methadone is viewed negatively now. Those who are not taking methadone think that those who are receiving methadone either have AIDS or, I

apologize for saying this, have became lasshi and cannot afford to buy drugs, so they had to participate in the methadone program.

After-care

As many drug-using prisoners have been treated under the MMT program inside Ghezel Hesar Prison, there is increasing concern about the after-care of these patients. This was reported by both prisoners and health policy makers.

Facilitator- Well, have you decided what you want to do after being released? Do you want to continue taking methadone?
Prisoner 1- Yes I want to continue
Prisoner 2- Me too, If I have to go out and use drugs, I prefer to take methadone.
Prisoner 3- There are many people who have high blood sugar and they take medicine for life, as do many other people who are sick. We are also sick and should take 10 cc of methadone a day!
Prisoner 4- It will be very good if we can find it outside. I can go and take methadone every morning and then go to work. Considering myself as a patient, and taking my medicine and going to work, would be much nicer than before.
Facilitator- Do you have any worries about finding a place to get methadone?
Prisoner 3- Yes I do. There is nowhere to go for methadone in my city.
Prisoner 4- I am concerned about what I heard from others; that they could not find it outside!
Prisoner 2- No, you can find it in Tehran.

Discussion

MTT constitutes one of the main components of the Iran Prison Organization's comprehensive HIV prevention package and is becoming increasingly accessible to drug-using prisoners in Iran. However, little research has produced evidence regarding the effectiveness of this intervention. In this study, we explored the current provision of MMT in Ghezel Hesar prison, Iran, and investigated its potential impact on drug-related risk behaviors and the well-being of prisoners' families. Our findings indicate that the MMT program in Ghezel Hesar prison has been successful in helping many drug-using inmates reduce their risk of drug-related harm. Our findings also show that the MMT program has effects beyond those on the direct recipients of methadone because it also benefits the families of MMT recipients.

Before introducing the MMT program, various illicit drugs were accessible in Unit 1 of Ghezel Hesar prison. Therefore, we explored the main differences in accessing illicit drugs between the outside community and inside prison and then the differences in the accessibility of illicit drugs before and after introducing the MMT program. We looked at accessing illicit drugs inside prison through a model originally introduced for evaluating the "degree of fit" between clients and health services (Pechansky and Thomas, 1981). According to this model, the "degree of fit" might be influenced by the availability, accessibility, acceptability, affordability, and accommodation of services. Access to illicit drugs was comparable between the community and prison setting in terms of availability and acceptability, although drug-using prisoners consistently stated that illicit drugs were slightly more accessible and better accommodated inside prison. Nevertheless, the price of drugs was much higher inside prison compared to in the community, which made drugs less affordable for many prisoners, especially those who were underprivileged. As the participants stated, not being able to afford the high prices of illicit drugs inside prison may predispose one to injecting them inside prison.

After introduction of the MMT program in Unit 1 of Ghezel Hesar prison, the rates of drug injection and consequently of sharing needles have reportedly been reduced to very low levels among both recipients and non-recipients of MMT. As a high risk of HIV transmission occurs through shared drug injection inside prison, the significant reduction in the amount of drug injection, and thus needle sharing, following the MMT program is of great importance in preventing HIV infection in Ghezel Hesar prison. As expected, scaling up the MMT program has decreased the number of clients buying illicit drugs in Unit 1 of Ghezel Hesar. Consequently, some opposition to the MMT program reportedly came from dealers. Although no consistent accounts exist on the impact of MMT on the price of illicit drugs in Unit 1, many participants believe that the MMT program has resulted in a modest reduction in the price of drugs.

Our study also revealed a possible impact of the MMT program on the social and economic well-being of the families of the prisoners. The participants unanimously reported that MMT has helped ease the financial burden on their families, as they no longer need to give money to the prisoners to buy illicit drugs, which are particularly expensive inside prison. This in turn may have helped prisoners maintain ties with their families by eliminating such financial problems.

At the individual level, recipients of methadone reported improvement in their physical and psychological health. While some side effects reported by the participants of this study should not be overlooked, the improvement in physical health, including general well-being, improved appetite, and not using illicit drugs, were very satisfying for the MMT recipients. Contrasting views and experiences about the effect of psychological fitness and having gained hope for the future were also important issues for participating MMT recipients. Different opinions were expressed on the effects of MMT on sexual desire and the health of the recipients,

but one important benefit is that MMT may help some young drug users refrain from selling sex for drugs in prison.

Recent bio-behavioral studies conducted among visitors to drug-treatment facilities and those in a community-based setting in Tehran found that that HIV-1 infection was associated with a history of shared drug injection while in prison and with multiple incarcerations (Zamani *et al*., 2005, 2006). Other studies have also documented the risk of HIV transmission associated with shared drug injection in Iranian prisons (Razzaghi *et al*., 2000; Razzaghi and Rahimi, 2005). Our qualitative findings indicate that the MMT program can potentially reduce drug use and drug injection by inmates in Ghezel Hesar prison, a finding that concurs with evidence from other countries (Gossop *et al*., 2001; Tomasino *et al*., 2001; Dolan *et al*., 2003, 2005). Consequently, it is very important that comprehensive HIV prevention measures, including MMT, become widely available for drug-using prisoners to best control the epidemic among injection drug users and prevent further transmission of the infection to broader populations.

Our findings were based on observations of the existing practice of MMT and through analyses of the data collected from a range of participants, thus providing insight into the implementation, impact, and obstacles of the program compared to pilot studies, which provide information in a controlled experimental context. They indicate that at the time of the study, several barriers existed to the provision of quality MMT and scale-up of this unique prevention intervention in Ghezel Hesar prison, Iran. The shortage of qualified personnel seems to be a real impediment to the controlled administration of methadone in the prison. This shortage of health personnel is mirrored in some deficiencies, such as an unexpectedly high rate of methadone diversion in the prison units and reduced quality of counseling and psychological care for MMT recipients. Although the level of dedication and commitment of the health personnel and other people currently involving in

providing MMT in Ghezel Hesar prison is very high, any plan for further scale-up MMT in this prison must find a way to deal with the shortage of qualified health personnel as the first priority.

To support the scaling up of MMT in prisons, the Iranian Ministry of Health has envisioned a procedure that allows prisons to obtain the required amount of methadone from the company that produces it. The budget allocated to MMT covers only the cost of the methadone tablets/syrup, and cumbersome administrative procedures and budgetary problems are involved in obtaining these funds.

As general policy, the Iranian government has banned the creation of any new positions in any government setting. In addition, the drug control budget, which finances the MMT program, does not allow payment for staff and space. Therefore, every attempt to hire new staff after introducing MMT in Ghezel Hesar prison has been unsuccessful. Only in the context of the Global Fund, which supports a degree of scaling up MMT, among other activities in the prison, was some financial support for staff possible. All MMT staff perform their daily activities in addition to any previous health provision tasks for which they were already responsible. Overtime is sometimes paid for this additional work.

Although the health care staff seem quite open and nonjudgmental toward drug-using inmates, including injection drug users and the MMT, the fact that MMT commenced with the most disadvantaged prisoners has unintentionally stigmatized the inmates in the MMT program. This might pose an obstacle to scaling up the process. Although it sounds paradoxical, this problem might be solved after expanding the program to other units with more neutral reputations in terms of the types of prisoner incarcerated.

Some limitations to this study should be noted. This qualitative study did not seek to generalize its findings, but to make a variety of observations on the provision of MMT and its utilization by incarcerated drug users in a prison setting. Consequently, participants with different backgrounds and experiences were intentionally recruited into this study to enable detailed exploration and understanding of the context in which MMT is provided in Ghezel Hesar prison. While the analysis was initially conducted by one qualified researcher, the process of data analysis was shared with others and the findings were interpreted and triangulated by the key researchers on the team. We relied primarily on self-reported risk behaviors, which are vulnerable to bias through faulty recall ability or social desirability (Latkin *et al*., 1993). Although the research team and prison health staff made substantial efforts to provide opportunities for the participants to feel at ease and share their thoughts and experiences with us through focus group discussions, their *socially desirable* responses could be a particularly important source of bias in research involving inmates in a punitive setting. Even in a community setting outside prison, limitations exist to relying on self-reported sharing of needles and syringes, rather than on other more objective measures (Shrestha *et al*., 2006).

In conclusion, this study is among the first attempts in Iran to qualitatively examine the impact of MMT on drug-related risk behaviors among drug-using prisoners in a routine context. Our findings indicate that access to MMT is very helpful for improving the physical and psychological health of the recipients. In particular, MMT is perceived as being very effective in reducing illicit drug injection in a prison setting and can be considered a major intervention for preventing the transmission blood-borne infections among inmates. MMT also had a promising impact on the financial and social well-being of prisoners' families by easing the financial strain placed on both the families and drug-using prisoners before receiving MMT. Overall, our qualitative findings indicate that it is essential that comprehensive prevention measures, including a MMT program, are made available

to incarcerated drug users and these programs be better coordinated with those available in the outside community.

Recommendations

1. In general, the provision of methadone maintenance treatment (MMT) in Ghezel Hesar prison is very good and somewhat rare and should be considered as a basis for other correctional settings in Iran to introduce this substitute treatment for their drug-using prisoners.

2. One major problem regarding the provision of MMT in Ghezel Hesar was that a very large number of prisoners (about 1000 people) are given methadone under the supervision of a few nurses and within a limited time. While this shows the commitment of the existing health staff in providing MMT to huge numbers of demanding drug-using prisoners, this shortage of staff and the inadequate supervision of methadone intake can affect the quality of a novel program that had been initiated in a more organized way. Finding a practical means for increasing the staff for MMT provision in the prison is necessary.

3. Consequently, the diversion of methadone to the drug-using population was perceived as an important problem regarding the provision of MMT in Ghezel Hesar. It is very important that both health and managing authorities make serious attempts to prevent the diversion of methadone into prison blocks.

4. The high levels of concern among drug-using prisoners over the potential side effects of methadone were much more intense than expected. Unless a well targeted educational program regarding the overall safety of methadone for long-term use is developed, these concerns, which might have been intensified by drug dealers in Ghezel Hesar prison, may affect the acceptability of MMT to a substantial degree.

5. Many of the families of the MMT recipients in Ghezel Hesar prison seemed to have derived some benefit from MMT for their imprisoned family member.

However, considering the rumors regarding the side effects of methadone, the health department should actively inform the family members who visit their imprisoned relatives about the health benefits of methadone maintenance.

6. Moreover, health policy makers in the Iran Prison Organization must actively engage with other planners to provide MMT in the outside community to coordinate the overall provision of MMT for opioid users between a correctional setting and the outside community. A preliminary step in establishing a referral system could be to collect the contact details of public and non-governmental MMT centers in the community and coordinate referrals to these centers before MMT patients are released from prison.

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Annex I

Focus group flow

Topic	Main questions	Probe
Introduction	-	-
Warm-up question	Describe a typical day of your stay in Ghezel Hesar Prison	Filling your time during the day and at night
General questions about drug use	Can you compare accessing illicit drugs inside and outside prison?	Availability, price, quality, pattern of use (including injection), variety, rate of use, ease at use
	How do prisoners manage to cover the cost of drugs while they are in prison?	Dealing drugs, support from family, work for other prisoners, any other way to get money
Health services at Ghezel Hesar	What kind of services have you received for your drug use problem here in Ghezel Hesar Prison?	
MMT	Experience of receiving methadone from the health unit in the prison	Personal experience, other inmates' experiences, health benefits or disadvantages of methadone, change in the formulation of methadone,
	Could you compare your condition before and after receiving methadone?	Personal experience, other inmates' experiences

Topic	Main questions	Probe
MMT	How do you compare the situation in your prison block or unit before and after the introduction of the methadone program?	General, drug availability, price, pattern of use (including injection), drug variety, rate of use
	How is methadone viewed by prisoners and prison authorities in Ghezel Hesar?	Those receiving MMT, those on the waiting list, those who did not apply to receive MMT, health personnel, guards, and other authorities and why?
	How long did you have to wait until you first received methadone?	If it was a long time, how did you spend the time before receiving methadone (drug use, psychologically)?
	What do you think about the way methadone is being provided to you at Ghezel Hesar Prison?	Timing Daily supervision Methadone syrup Attitude of staff Availability
	Do you want to talk about concerns you may have about methadone?	Have you ever asked the physician, psychologist or other person about your concerns?

Topic	Main questions	Probe
MMT after care	How is methadone accessed during a leave or after release from Ghezel Hesar Prison?	Personal experience, other inmates' experiences. Which setting do you prefer to visit for after care?
Expectations	Is there anything you want to have changed regarding the methadone treatment in Ghezel Hesar Prison?	
	What are your expectations regarding health/treatment services in general in Ghezel Hesar?	
Ending	Is there anything that you want to add?	
	That's the end of interview. Thank you very much for your time.	

Annex II

Information sheet and consent form

In the Name of God

My name is …… My colleagues and I are conducting a study about methadone maintenance treatment and, for this, we are interviewing some of the prisoners and authorities in Ghezel Hesar Prison. In this regard, your experience and opinions are very important to us. Your participation is completely voluntary and, if you decline to participate in this interview, it will not affect your situation in this prison, and will have no effect on your current or future treatment with methadone. There is no invasive procedure during this study and we do not collect any samples from you. We do not ask any names or addresses in this interview, and all of the information obtained is used to improve health services, including treatment with methadone in this prison or other settings. In order to further analyze the data, we have to audio-record all of the interviews. This group discussion will be conducted in the presence of 3-4 other prisoners and it is expected that it will take 1.5 hours. Do you agree to participate in this group discussion?

Yes ☐ No ☐

Signature of the interviewer on behalf of the interviewee _____

Basic information

Gender	Male	Time elapsed since entering Ghezel Hesar	
Age		Time remaining to complete the current sentence in Ghezel Hesar	
Marital status		Receiving methadone or not	
Education		If so, for how long	
Religion		What name do you prefer to be known by in this interview?	
Job before entering Ghezel Hesar			