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People who inject drugs
and HIV transmission in Indonesia:
a biopsychosocial approach

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People who inject drugs and HIV transmission in Indonesia: a biopsychosocial approach

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Doctoral thesis

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List of abbreviation

ART	AntiRetroviral Therapy (HIV treatment)
BNN	Badan Narkotika Nasional (National Narcotic Board)
Depkes	Departemen Kesehatan (Ministry of Health)
CST	Care Support and Treatment
HR	Harm Reduction
IDU	Injecting Drug Users
IMPACT	Integrated Management of Prevention and Control & Treatment of HIV/AIDS
KPA/ NAC	Komisi Penanggulangan AIDS (National AIDS Commission)
MMT	Methadone Maintenance Treatment
NGO	Non Governmental Organization
NSP	Needle and Syringe Program
Puskesmas	Pusat kesehatan masyarakat (Community Public Health Centres)
VCT	Voluntary Counseling and Testing (HIV)

chapter 1

Introduction

This introductory chapter starts with a description of HIV problem in Indonesia and the role of people who inject drugs in HIV transmission. The intervention programs to handle HIV transmission driven by people who inject drugs are described; this is followed by the concept of biopsychosocial approach. Finally, an overview of the aims and structure of this thesis is presented. The previous term for people who inject drugs is injecting drug users (IDU), which will be used in most of the chapters.

HIV epidemic in Indonesia

The first case of Acquired Immunodeficiency Syndrome (AIDS) in Indonesia was notified in 1987¹ and it was not until 1995 that the first AIDS case among injecting drug users (IDU) was reported². Since then, IDU have constituted to be a major component of the country's HIV epidemic and being the main route of transmission in large parts of Indonesia, especially in urban areas of Java, North Sumatra, and South Sulawesi, followed by heterosexual transmission, especially in Papua³. Injecting drug users may constitute 50% of all HIV-infected individuals in Indonesia (see figure 1), compared with 0.6% for South Africa and 3% for Kenya^{4,5}.

In the Indonesian report on the follow up of the declaration of commitment on HIV/AIDS, it was shown that the estimated annual number of new HIV infections in South and South-East Asia decreased from 450,000 (150,000-800,000) in 2001 to 340,000 (180,000 - 740,000) in 2007. In spite of this improvement, in South-East Asia and particularly in Indonesia, the prevalence of HIV is growing. The increasing number of new HIV infections in Indonesia makes the epidemic one of the fastest growing in Asia, even though the aggregate national prevalence is as low as 0.16%⁶.

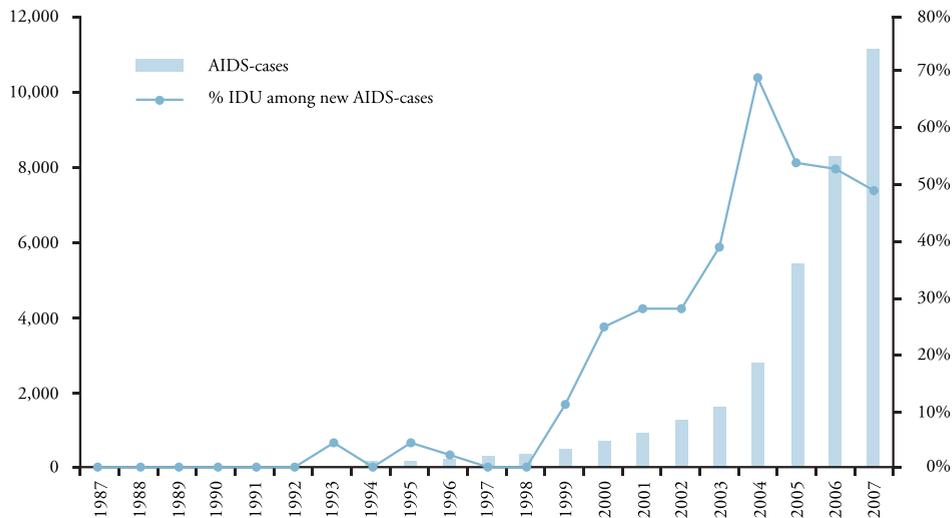


Figure 1.1 Trend of cumulative AIDS cases and IDU percentage among new AIDS cases⁷.

Injecting drug users in the context of HIV epidemic in Indonesia

Similar to various other countries, it was the HIV epidemic that drew the first attention to the increase of drug-taking practices in Indonesia. Until 1998, all data indicated that the HIV prevalence in Indonesia was low, even in the traditional high risk groups, such as men who have sex with men, female sex workers, and people who inject drugs.

A survey in the major drug treatment centre in the capital, Jakarta, found no indication for HIV infection among those tested from 1996 to 1998, however, because of limited numbers of IDU under treatment, only between 50 and 60 a year were tested. In the next survey in 2000, 39 out of 247 (15%) from IDU were tested HIV-seropositive. Two years later, HIV prevalence among injectors at this sentinel site was recorded at 48% - by far the highest prevalence rate among any risk population in Indonesia⁸. The Indonesian Ministry of Health reported HIV seroprevalence among IDU to be 43 - 56%⁹, a very high rate compared to other Asian countries such as Pakistan (8-24%)¹⁰, China (18-50%)¹¹, Vietnam (34%)¹⁰, Thailand (38%)¹².

The estimation number of Indonesian people who inject drugs in 2003 was 145,000 to 170,000⁸. IDU in Indonesia¹³⁻¹⁵ are younger and had higher education (most of them graduate from senior high school or higher education) compared to IDU in Australia, Canada, China, Iran, Israel, Netherland, Poland, Thailand, and USA¹⁶⁻²⁰. Several Indonesian studies reveal that almost all IDU reported risky injecting practices^{13, 21, 22}. Findings from the Indonesian Behavioural Surveillance Survey (BSS) in 2004-2005 indicated that IDU tend to gather in groups to 'shoot up' together in a particular circle with an average size of 7-14 people²³. Apart from transmission of blood-borne infections among peers, IDU may also spread these infections to the general populations. A study conducted in 2002, showed that over two-thirds of IDU were sexually active with high sexual risk behaviour, consistent condom use was reported by 10%, and almost half of them also reported having multiple sexual partners,¹³.

Indonesian programs for the prevention of HIV transmission

A variety of prevention strategies have been adopted and implemented in Indonesia to reduce the emerging HIV epidemic. Many governmental organizations play a role in the control of the HIV/AIDS epidemic, primarily the KPA or the National AIDS Commission (NAC), which has been a part of the Presidential Cabinet from July 2006. The Ministry of Health is responsible for implementing the response to the HIV/AIDS epidemic, comprised of four departments. The Pharmacy Department is responsible for all medications including anti-retroviral treatment (ART). The Centre for Diseases Control includes the National AIDS Program which is responsible for program development, building local human resources and for all matters related to epidemiology. The Department of Medical Services runs all the hospitals, the Drug Program (including methadone clinics), and all laboratories. Lastly, the Community Health Department is responsible for the Community Public Health Centres (Puskesmas) programs.

The National Narcotic Board (BNN), which is related to the National Police, is responsible for drugs demand and supply reduction. Demand reduction includes prevention (family based, school based, community based and workplace based), treatment and rehabilitation activities in public, non-government organizations (NGO), and private facilities, employing various modalities. Supply reduction strategies are implemented through more intensive eradication of cannabis cultivation, intensive investigations and raids of clandestine manufacturers and applying strict airport and seaport interdictions. Also related to this effort is the Ministry of Justice and Human Rights, which runs prisons in the country and is responsible for every intervention inside the prison system²⁴. Supply and demand reduction approaches are complemented by a harm reduction (HR) approach.

The role of NGO in HR activities has been notably instrumental since late 1990s², and it was not until early of January 2007 that the official national policy has been stipulated. The national HR policy aims to prevent HIV transmission among IDU and their partners, prevent HIV transmission from IDU and their partners to general population; and integrate HR approach into public health system through HIV/AIDS prevention, care, support and treatment (CST) services as well as drug addiction rehabilitation service. It is implemented through 12 programs or services by involving multi-sectorial agencies and institutions and by 2010 the programs should provide corresponding services for at least 80% of the IDU population²⁵.

Among the twelve HR programs, the methadone maintenance treatment (MMT) is stated as priority programs by the Ministry of Health⁷. The opioid substitution treatment has shown its effectiveness in reducing injecting drug use, unsafe injection practices, unsafe sexual practices, and seroconversion rates for HIV²⁶⁻²⁸. By 2008, twenty-four MMT clinics are operational in seven provinces²⁹ and 110 service points of needle and syringe exchange programs (NSP) are operational in Indonesia³⁰. The national Integrated Biological and Behavioural Surveillance Survey (IBBS) in 2007 revealed that most of those who received MMT were still injecting drugs³¹ and despite receiving needles from needle exchange program (NEP), IDU still shared needles, ranging from 9% in Semarang to 63% in Jakarta³¹, leading to question about its effectiveness.

Apart from continuing needle sharing, the coverage of HR programs is still low and the drop-out rate is high. WHO-SEAR and Indonesian ministry of health (2007) reported that there were a total of 1,546 MMT clients registered in 12 MMT clinics by the end of 2006, in which only 752 of them (49%) were still in treatment¹. Furthermore, in 2006, the total number of IDU residing in the cities in which the clinics operated was estimated to be not less than 42,000⁹. It implies that only 4% of IDU ever used the service.

Many studies have shown that pharmacotherapy is an effective HR strategy. Methadone and buprenorphine are commonly used with positive effects as described above²⁶⁻²⁸. However, the complex nature of addiction may ask for additional interventions, such as HIV-related or psychiatric medical care. For patients in need, the provision of these additional support services is indeed associated with improved drug treatment retention and lower relapse rates^{28, 32}. Besides stabilization and reduction of the injecting risk behaviour, abstinence could be a legitimate goal of harm reduction³³⁻³⁶ and preferable when feasible^{37, 38}. Finally, it should be noticed that the different HR programs not only reduce the harmful consequences of drug use of individuals but are beneficial from a public health point of view as well.

Context of IMPACT

The work that is presented in this thesis has been performed as a part of the EU-funded IMPACT program. IMPACT stands for Integrated Management of Prevention And Control and Treatment of HIV/AIDS. The official project name is “Prevention Control and Treatment of HIV/AIDS of intravenous drug users in West Java Indonesia (EC contract number SANTE/2005/105-033).

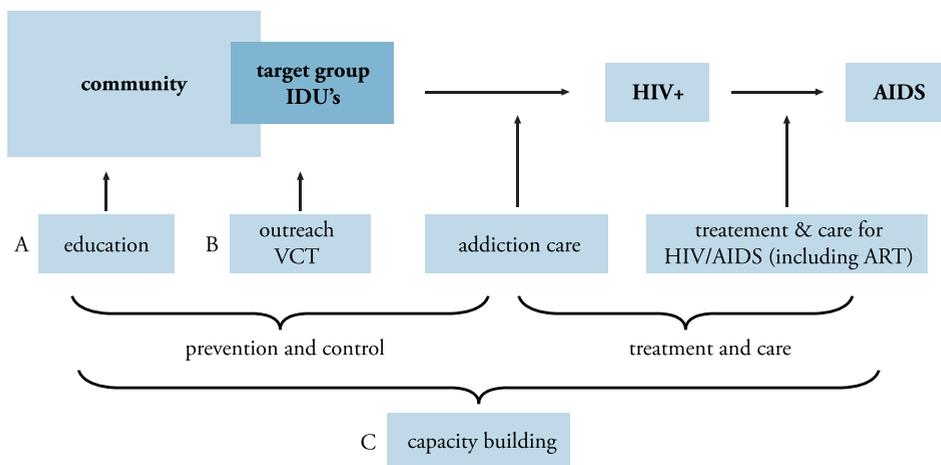


Figure 1.2. Framework for comprehensive measures to control the HIV epidemic in West Java

This 5 year project (principle investigators Dr B Alisjahbana and Prof Dr A van der Ven) used a comprehensive and integrated approach combining the following main activities (figure 1.2): 1) information, education and communication about HIV-related risk behaviour in adolescents; 2) scaling-up voluntary counselling and testing (VCT) and improving its accessibility for injecting drug users (IDU) in the community, prison and

hospital; 3) harm reduction strategies, including Methadone maintenance; 4) scaling-up care for HIV/AIDS, including antiretroviral treatment; 5) capacity building and transfer of knowledge about IDU and HIV/AIDS. The present work is mostly focussed on objective 3 but was done in collaboration with researchers focussed on the other IMPACT objectives.

Concept of biopsychosocial approach

There are several concepts of addiction, such as the moral model, pharmacological model, symptom model, disease model, and learning mode, and different treatment types that can be offered depending on the model³⁹. One of the latest introduced models was the biopsychosocial model. This model views addiction as a disease with continuum of severity with biological, psychological and social causes and consequences^{40, 41}. Changes in one area could result in changes in other areas and the combination, interactions and the weightings of specific factors will be different for each individual⁴⁰.

IDU in Indonesia are suffering from addiction as a chronic brain disease often in co-occurrence with HIV and other somatic, psychiatric and social problems. All of these co-occurring problems and their treatment interact in a complex way. Furthermore, like other Asian countries, Indonesia is a collectivist society. People are integrated from birth onward into strong, cohesive in-groups, often extended families⁴². Involvement and support from the family or non-related subjects are strongly associated with better physical and psychological adjustment, improving the well being of patients^{43, 44}. However, families with high stress may also transfer psychological distress to other family members⁴⁵. Therefore, family members can be seen as a source of support from one side but may act as a source of stress from the other side⁴⁶.

Aims and outline of the thesis

As outlined above, IDUs contribute significantly to the recent emerging HIV epidemic in Indonesia. Harm reduction is part of the comprehensive approach to prevent, control and treat HIV among IDU. The implementation of harm reduction strategies in West Java, Indonesia asks for several considerations which form the basis of this thesis. The following specific aims were formulated:

- 1 To review the biopsychosocial paradigm in people who inject drugs (chapter 2, 6)
- 2 To describe the socio-demographic characteristics and risk behaviours of people who inject drugs as well as the determinants of access to drug treatment (chapter 3, 4)
- 3 To describe the co-occurring problems and the relation with the quality of life in patients participating in a Methadone Maintenance Treatment program (chapter 5)
- 4 To explore factors that influence family involvement in HIV care (chapter 7)

Implementation of harm reduction program in Indonesia faces great challenges. Until recently, a common view of the general public and some health care providers in Indonesia was that drug addicts are weak or bad people, unwilling to control their behaviour and gratifications^{47, 48}.

On the other hand, health care providers and societies may also view drug dependence as a curable, acute condition and not as a chronic disease. These viewpoints may have an impact on the treatment strategies and outcome expectations⁴¹. In chapter 2, the existing theory about the etiology of addiction, including genetics, drug induced changes in the brain, and environmental factors is therefore reviewed. Studies in Indonesia and other countries about drug addiction, associated risk behaviour, and co-occurring physical, psychiatric and social problems are also discussed. At the last part of this chapter, the consequences regarding addiction as a complex biopsychosocial phenomenon for prevention and treatment are discussed.

There is a considerable number of IDU who change from injection to non-injection drug administration. These subjects are called former injecting drug users when no drugs have been injected in the previous 6 months^{49, 50}. The high HIV, Hepatitis B and C prevalence in former IDU is important since these infections can be further transmitted to others through sexual risk behaviour, sharing of non-injection drug-use implements such as straws and crack pipes, and other practices such as tattooing⁵¹⁻⁵⁴. In chapter 3, the HIV risk behaviour among former IDU in comparison with current IDU in Indonesia is explored.

There is an indication that the access to treatment and care is limited for IDU³. Drug use is illegal and highly stigmatized; factors that influence treatment entry among drug users may differ from factors that influence treatment utilization for other types of health needs. In chapter 4 characteristics of the IDU who had accessed substance abuse treatment are compared and types of substance abuse treatment which are associated significantly with HIV programs are determined

The retention and the coverage of the MMT programs in Indonesia remains very low²⁴. Care for co-occurring problems will increase the effectiveness and higher utilization of services²⁸ and integrated services should be established based on the patients' characteristics and problems⁵⁵. In chapter 5, the prevalence of physical, psychiatric, and drug abuse co-occurring disorders among MMT patients in Indonesia is described and the association between the severity of the co-occurring disorders and the quality of life is determined.

The prevalence of psychiatric disorders in IDU is high (20, 56-63). The psychiatric problems are associated with HIV infection and its treatment (64-66) and drug use (16, 61). In chapter 6, the prevalence of psychiatric disorders and the interaction of drug addiction and physical co-occurring disorders and their treatment which lead to psychiatric co-morbidity are reviewed, focusing to IDU in Asia and Africa, where HIV prevalence is high and still increasing.

Involvement and support from the family or non-related intimates are strongly associated with better physical and psychological adjustment in HIV-infected patients^{43, 44}. However, data regarding factors that may influence the support of non-related intimates is still limited. In chapter 7, an explorative study is described in 123 respondents: 36 family members of HIV patients with IDU history; 43 family members of HIV patients without IDU history; and to 44 family members of patients with tuberculosis for comparison. The satisfaction of the family members in services received from health care providers, problems they are faced

with in helping sick relatives, and their hope concerning the future of their sick relatives are described.

A summary and general discussion (chapter 8) completes the thesis by emphasizing the key findings, the recommendation, the limitation of the study, and the direction for the future research.

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chapter 2

Prevention and treatment of HIV addicted patients : a biopsychosocial approach

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Abstract

Injecting drug use is the main route of HIV transmission in many parts of Indonesia. Efforts to prevent HIV-transmission through injecting drug use mostly focus on subjects who actively inject. In scientific publications the term 'injecting drug users' tends to be used without a clear definition and without specifying the pattern of drug use as current or former drug use, frequency, duration, type of injected drug(s) or context (e.g. imprisonment). Actually, injecting drug users (IDUs) have different drug use patterns, risk behavior, somatic co-morbidity, psychiatric co-morbidity, and psychosocial problems. In fact, these patients are suffering from addiction as a chronic brain disease in co-occurrence with somatic and psychiatric disorder and many social problems. Failing in addressing the problems comprehensively will lead to the failure of drug treatment. This is why addiction can be best studied and treated from a biopsychosocial perspective. Accordingly, treatment goals can be differentiated in crisis intervention, cure or recovery (detoxification, relapse prevention), and care or partial remission (stabilization and harm reduction). In summary, injecting drug use in Indonesia is not a single entity and patient oriented prevention and care for IDUs, especially focusing on their addiction, should be addressed to prevent the transmission of HIV/AIDS.

Key words : Drug addiction, HIV/AIDS, prevention, treatment

Introduction

The prevalence of HIV/AIDS has greatly increased in recent years in Indonesia^{1,2}. The number of infected cases increases because of the transmission of these viruses through injecting risk behaviour, sexual risk behaviour, and other risk behaviour, but injecting drug use is mostly underlying this trend³. Compared to other countries, Indonesia has the highest HIV-prevalence rates among IDUs, ranging from 43 – 56% in official reports⁴. A recent survey in Bandung showed that 75% of 210 IDUs recruited through respondent-driven sampling reported to be HIV-tested, and 63% of them to be HIV-positive (Iskandar, unpublished report). Injecting drug use is mostly a result of drug addiction, and we can therefore conclude that drug addiction and injecting drug use are the main factors driving HIV-infection in Indonesia.

Generally, the concept of injecting drug use is overly simplified, with little attention for the underlying problem of drug addiction. Too often, service providers and policy makers propagate needle exchange programs and/or pharmacotherapy as the ‘one fits all’ harm reduction without having properly characterized all problems of the addicted patient(s). In order to reduce the spread of HIV, a state of the art of addiction has to be applied on the development of treatment programs.

Until recently, the most common view was that drug addicts are weak or bad people, unwilling to control their behavior and gratifications^{5,6}. However, it has been shown that addiction is a chronic brain disease^{5,7}. In one important study of more than 3,000 twin pairs, Tsuang and colleagues reported that both environmental and genetic factors influenced abuse and dependence for several types of drugs, with genetic factors accounting for over 50% of the variance for opiate abuse or dependence^{8,9}. A family study found that the adjusted odds ratio for having the same drug disorder in adult first-degree relatives was over 7 for cocaine and over 10 for opioids, again indicating an involvement of genetic factors¹⁰.

This change in paradigm has serious consequences for the way professionals should look at addicted patient and their disease. In this article we first give an overview of the current insights in the psychopathology and the consequences for their diagnosis. Then we will address the etiology, including genetics, drug induced changes in the brain, and environmental factors. The drug addiction and associated risk behavior are often accompanied by somatic, psychiatric and social problems, which will also be discussed. Finally, we will discuss the consequences regarding addiction as a complex biopsychosocial phenomenon for prevention and treatment.

Psychopathology and Diagnosis

At cellular level, all drugs of abuse share a common characteristic which underlies their abuse potential: initial use in the mode and pattern of abuse leads to rapid increase or decrease of receptor and/or transporter function, neurotransmitter/ neuropeptide activity, and secondary messenger signaling. Changes in the gene expression of target proteins follow frequent, repeated exposure. Cessation of drug use leads to similarly profound changes. Thus, recurrent “on-off” use of short-acting drugs produces long-term, perhaps permanent, alterations in these affected neuronal systems and underlies the development of tolerance, dependence, withdrawal, and relapse characteristic of the addictive diseases^{7,8,10,11}.

One of the receptors which has a big role in developing addiction is mu opioid receptor¹². MOR is included in the G-protein-coupled receptor (GPCR) superfamily. When agonist binds to the receptor, it induces the dissociation of alpha subunit and β/γ subunits. The α subunit inhibits the enzyme adenylyl cyclase leading to a decrease in intracellular cyclic AMP concentrations¹³. The β/γ subunits activate G protein-activated inwardly rectifying potassium (GIRK) channels, and inhibit voltage-sensitive calcium channels^{8, 14, 15}. The reduction in cAMP levels seems to be involved neither in the opening and closing of ion channels nor in the inhibition of transmitter release by opioids and to reduce transcription of several genes with cAMP-responsive promoter elements¹⁶.

The phosphorylation of receptors by GPCR kinases (GRKs) leads to the recruitment of arrestins. Interaction of arrestins with GPCRs results in an uncoupling of G-protein signaling from receptors (receptor desensitization) and a recruitment of the endocytic machinery leads to receptor internalization¹⁷. However, morphine induces only weak or partial desensitization and little to no endocytosis. This will lead to tolerance and dependence that occur with chronic morphine treatment¹⁸.

In central nerve system, MOR has a widespread distribution with particularly high levels in the striatal patches (striatum), thalamus, nucleus tractus solitarius, and spinal cord^{19, 20}. The ability of MOR ligands to modulate presynaptic norepinephrine and dopamine release and may be critical in behavioral arousal and reward systems²⁰. The change in reward system function is regarded as the final common pathway to addiction. The change in the function of the frontal cortex makes a decrease of response inhibition and an increase in the salience of psychoactive substances. As a consequence, the imbalance between an impulsive part of the brain and the more reflective part is created which is mirrored in a behavioral imbalance between approach and avoidance of psychoactive substances. Before this imbalance results in inappropriate decision-making followed by the approach of a drug, the addicted patient is overwhelmed by 'craving', a strong longing for the drug. Although craving is regarded also as a central concept in addiction, it is hard to define because the gap between subjective experience and objective measurement of the phenomenon. Finally, the psychopathology of addiction is under influence of underlying vulnerability of the stress system in the hypothalamic pituitary adrenal axis²¹.

According to DSM-IV, the most widely used manual for the classification of psychiatric disorders²², a diagnosis of substance dependence is met if three or more of the following occur in a 12-month period: 1) tolerance, defined by the need for increased amount of substance to achieve the desired effect or diminished effect with continued use of the same amount of the substance; 2) development of a characteristic withdrawal syndrome when the substance is stopped or the use of the substance to prevent the onset of withdrawal; 3) increased or prolonged use; 4) a desire or unsuccessful attempts to cut down or control use; 5) significant time spent in activities related to drug procurement, use, and recovery; 6) important social, occupational, or recreational activities are sacrificed because of substance use; and 7) ongoing use despite knowledge of ongoing physical or psychological harm related to substance use²². However, most research on which the DSM-IV criteria are based is from the late 80's and early 90's of the last century. New insights are missing in the DSM-IV or are not linked to the criteria yet.

Genetic factors

It has been estimated that genetic contribution to addiction is 30-60%^{8, 11, 23} and opioid system has the biggest role in it. One of the genes in opioid system that has received a lot of attention in addiction studies is OPRM1 gene encoding MOR¹². MOR mediates positive reinforcement following direct (morphine) or indirect (alcohol, cannabinoids, nicotine) activation.

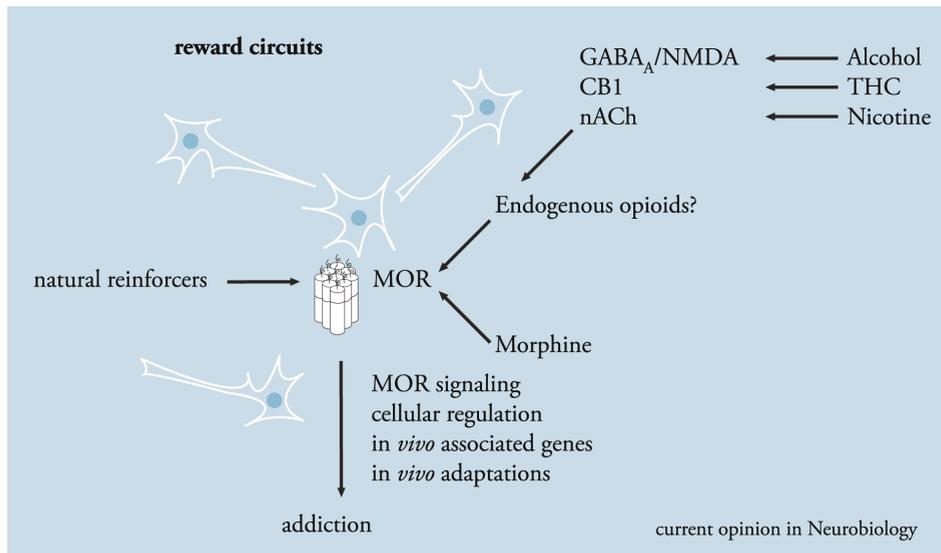


Figure 2.1. Relationship between Mu opioid Receptor and Addiction

Mu opioid receptors¹² are largely distributed along reward circuits where they mediate the reinforcing activities of morphine and several non-opioid drugs. The non-opioid drugs act at their own receptors (GABA_A and NMDA receptors for alcohol, CB1 receptor for THC and nicotinic acetylcholine receptor for nicotine) and are likely to induce the release of endogenous opioid peptides that, in turn, activate mu receptors. Mu receptors, therefore, represent a convergent molecular gate in the initiation of addictive behaviors. Inadequate mu receptor activation might be one of the mechanisms underlying deregulation of reward pathways, which characterizes the addicted state⁶³.

The most frequent Single Nucleotide Polymorphism in MOR was A118G²⁴. The variant binds beta-endorphin with greater affinity, and activates K⁺ channels to a greater extent than the prototype receptor²⁴. It has also been reported that the A118G allele expresses approximately one-half the OPRM1 mRNA and about one-tenth the mu-opioid receptor protein. Therefore, subjects with the A118G allele would probably have greater response of the variant receptor but also have reduced receptor expression²⁵.

Another example of the genetic contribution is the inherited presence of an aldehyde dehydrogenase genotype (associated with alcohol metabolism) causes an involuntary skin “flushing” response to alcohol¹¹. Those whose initial, involuntary physiologic responses to drug are extremely gratifying will be more likely to use the drug again than those whose initial reaction is neutral or negative. Individuals who are homozygous for the aldehyde dehydrogenase allele (approximately 35% of the Chinese population, and 20% of Jewish males in Israel) have an especially unpleasant initial reaction to alcohol, and virtually no alcoholics

have this genotype²⁶.

Drug induced changes in brain function

Anatomically, the brain circuitry involved in most of the actions of addictive drugs is the ventral tegmental area connecting the limbic cortex through the midbrain to the nucleus accumbens²⁷⁻²⁹. Neurochemically, alcohol, opiates, cocaine, and nicotine have significant effects on the dopamine system, although through different mechanisms. Cocaine increases synaptic dopamine by blocking reuptake into presynaptic neurons; amphetamine produces increased presynaptic release of dopamine, whereas opiates and alcohol inhibit dopamine neurons producing increased firing rates. Opiates and alcohol also have direct effects on the endogenous opioid and possibly the g-aminobutyric acid systems^{5, 26}.

The ventral tegmental area and the dopamine system have been associated with feelings of euphoria. Animals that receive mild electrical stimulation of the dopamine system contingent on a lever press will rapidly start to press that lever again and again, ignoring normal needs for water, food, or rest. As such, cocaine, opiates, and several other addictive drugs produce supernormal stimulation of this reward circuitry²⁶.

Social Context

External stressors are important environmental factors contributing to the development and relapse of addiction. Environmental factors include prenatal and perinatal events; events occurring in early childhood; and later events, such as peer pressure, drug related cues, conditioning, setting for drug self-exposure, and concomitant ongoing psychiatric disorders, such as depression or anxiety. For example, repeated pairing of a person (drug-using friend), place (bar, casino), thing (paycheck), or even an emotional state (anger, depression) with drug use can lead to rapid and entrenched learning or conditioning. Thus, in drug-dependent individuals who have been abstinent for long periods, an encounter with a person, place, or thing that previously was associated with their drug use, may produce a strong physiologic reaction, such as withdrawal-like symptoms, and a profound subjective desire or craving for the drug. These responses can fuel the “loss of control” that is considered a hallmark of drug dependence²⁶.

The etiological factors mentioned above influence both the initial and early perception of a self-administered drug and contribute to the progression from occasional to intermittent or regular use and addiction, or, alternatively, to early cessation of drug use^{8, 30, 31}. A variety of personality factors and traits may also contribute to initiation of drug abuse, including impulsivity and risk-taking, as well as intrinsic atypical stress responsiveness⁸.

Somatic Co-morbidity

It has been estimated that HIV-seroprevalence is 52.4 % among Indonesian IDUs³². Because of addiction, drug users change their behavior, without regard to the potential or actual negative consequences⁸. Because of this, transmission of HIV remains a major public health challenge in persons who use illicit psychoactive drugs in many countries³³. In Indonesia, the recent Integrated Biological-Behavioral Surveillance conducted among most-at-risk groups in 2007 showed that many IDUs in six cities had shared needles in the week prior to the interview, ranging from 9% in Semarang to 63% in Jakarta³⁴.

Transmission of HIV and other viruses through sexual behavior may be equally important. Pisani et al. (2003) reported that in three big cities in Indonesia, over two thirds of IDUs were sexually active, 48% reported multiple partners, and 40% had bought sex from a female sex worker in the preceding 12 months. Consistent condom use was reported by 10%³⁵. The results from the Behavioral Surveillance Survey 2004-2005 showed that 96-99% of IDUs in several cities in Indonesia had multiple sex partners in the past year. Most of them knew that using condom can prevent HIV-transmission but only 25-38% used condoms in the last sexual contact with a sex worker, and only 10-29% of IDUs use condom consistently in the last year^{36, 37}. This situation is not unique for Indonesia. In the Netherlands, this has a very effective harm reduction program, unprotected sex leads to continued HIV transmission among IDUs³⁸. Finally, former IDUs, who compared with current IDUs, are more likely to have sexual contacts with people who do not use drugs³⁹⁻⁴² may also bridge the HIV-epidemic among IDUs to the low prevalence non-drug-using general population^{39, 43}.

Beside the risk behavior, direct effect of opioid on the immune system may increase both the risk of HIV infection and disease progression^{44, 45}. Opioid administration affects both innate and adaptative immunity, such as antibodies production, natural killer activity, cytotoxicity, cytokine production, chemotaxis, and phagocytosis^{44, 45}. Morphine is also known to activate the hypothalamic-pituitary-adrenal axis and release glucocorticoid, which is immunosuppressive⁴⁶. Besides, the ability of MOR activation to induce CCR5 expression suggests MOR agonists, such as morphine, may promote susceptibility to HIV-1 infection and disease progression associated with this infection⁴⁷.

Other medical conditions which are common among IDUs are viral hepatitis, liver disease, and bacterial infections like endocarditis, pneumonia and tuberculosis. Four factors contribute to drug users' risk for medical conditions. First, illicit drugs may have direct toxicity. Second, certain risk behavior. Third, lower access to health service due to the stigmatization. Fourth, social-economic disadvantages lead to malnutrition. Another contributing factor is when drug users experience withdrawal symptom. IDUs in ARV treatment and experiencing withdrawal symptoms had a fivefold increased risk of death with respect to the others⁴⁸. Finally, disruption of daily routines by active drug use (impeding self-care behavior such as medication adherence or appointment keeping), may adversely affect their health status.

Psychiatric co-morbidity

Besides somatic problems, IDUs may also have more psychiatric disorders. A study among methadone patients in The Netherlands reported a concurrent prevalence of co-morbidity of psychiatric disorders of 59.3%⁴⁹. Preliminary data in Bandung showed that more than one-third of methadone maintenance treatment (MMT) patients may have some kind of psychiatric problem (Hidayat, unpublished data). Some studies showed that drug use disorders had strong associations with mood, anxiety, and personality disorders. Axis I and II comorbidity with drug use disorders has been associated with underachievement, decreased work productivity, poor health, neuropsychological impairment, human immunodeficiency virus infection, hepatitis, social dysfunction, violence, incarceration, poverty, homelessness, a lower probability of recovery, poor treatment outcome, and poor quality of life^{5, 8, 11, 26, 50-52}.

These social consequences are important in shaping the generally held view that drug

dependence is primarily a social problem that requires interdiction and law enforcement rather than a health problem that requires prevention and treatment²⁶. The high drop-out, non-compliance, and relapse rates during and after treatment reaffirms the common view that drug dependence is not an acute medical illness. McLellan et al. (2000) have attributed the disappointing treatment results to the fact that current treatment strategies and outcome expectations view drug dependence as a curable, acute condition and not like a chronic illness with other treatment and outcome expectations as a result²⁶.

Prevention and Treatment

For effective control of HIV in Indonesia, both prevention and treatment of addiction are important. Preventive programs to those with high susceptibility to addiction should be started at an early age by giving information, education, communication, and developing learned behavior techniques such as life skill training, cognitive behavioral therapy, etc. For those who have become addicted, optimal care should be delivered. Since each kind of drug has its own characteristics, prevention of spread of viral blood borne infections among IDUs could benefit from tailoring interventions according to the type of drug used⁵³.

Until recently, drug dependence treatment often dealt with acute problems only, and as a result many addicted patients only received detoxification. A review on drug dependence versus type 2 diabetes mellitus, hypertension, and asthma showed that medication adherence and relapse rates are similar across these illnesses. That is why, drug dependence has to be treated like the other chronic diseases. The type and the goal of the treatment should consider the complexity of IDU's problem²⁶. There are 4 goals to be distinguished⁵⁴⁻⁵⁶:

- 1 Palliation, palliation is aimed to reduce symptoms and to relieve suffering from chronic dependent patients of whom no care or cure is feasible.
- 2 Care and stabilization, represented by maintenance treatment and based on harm-reduction. It directed toward reducing illicit drug use, drug-related criminality and health problems, ultimately resulting in improved health and social functioning.
- 3 Cure, represented by abstinence-oriented treatment aimed at stable abstinence and ultimately resulting in recovery from addiction. This goal contains two treatment phases, namely detoxification and relapse prevention.
- 4 Crisis intervention, crisis intervention is aimed at immediate survival and frequently necessary after a high overdose rate.

Therefore, the approach should be started by screening. Screening is performed to evaluate the possible presence of a particular problem. Further assessment is continued for those who has problems. Assessment is used for defining the nature of that problem and developing specific treatment recommendations for addressing the problem⁵⁷. The assessment and diagnostic processes are important and should be as the basis for determining the treatment plan. The treatment plan should be made by integrating evidence, therapist knowledge and appraisal, and the patient preferences⁵⁸⁻⁶⁰ (table 2.1).

All of these steps have to consider the drug use, somatic and psychiatric comorbidity of the patients. Treatment for somatic comorbidity is described for the Indonesian setting in two publications^{61, 62}.

Diagnostic and Treatment Process	
Screening	Determines the likelihood that a patient has other comorbidities besides the drug addiction problem. The purpose is not to establish the presence of specific type of disorders, but to establish the need for an in-depth assessment. Screening is a formal process that typically is brief and occurs soon after the patient presents for services.
Assessment	Gathers information, conducts physical examination, laboratory test, X-ray or other required examination. Determines the patient's readiness for change, identifies patient strengths or problem areas that may affect the process of treatment and recovery, and engages the patient in the development of an appropriate treatment relationship.
Treatment Planning	Develops a comprehensive set of staged, integrated program placements and treatment intervention for each disorder start with treating the acute problems. The plan is matched to the individual needs, readiness, preferences, and personal goals of the patient.
Integrated care	Performs integrated care and conducts routine meeting between experts to discuss the progression and problems during treatment.

Table 2.1. Diagnostic and Treatment Process
Adapted from SAMHSA, 2005⁵⁷

However, as in treatments for other chronic disorders, the major problems are medication adherence, early drop-out, and relapse among drug dependent patients. In fact, problems of poverty, lack of family support, and psychiatric co-morbidity were major and approximately equal predictors of noncompliance and relapse across all chronic illnesses. The best outcomes from treatments of drug dependence have been seen among patients in long-term methadone maintenance programs and among the many who have continued participating in support groups²⁶.

Conclusion

The biopsychosocial approach does not consider one intervention superior above other ones. On the contrary, a combination of biological, psychological, sociocultural interventions has to be implemented together according to the individual needs and problems of the patients. Failure in providing such a comprehensive treatment will worsen the overall condition of the patients. From a public health view, it will reduce the effectiveness of HIV/AIDS intervention programs.

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chapter 3

High risk behavior for HIV transmission among former injecting drug users : a survey in Indonesia

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Abstract

Background : Injecting drug use is an increasingly important cause of HIV transmission in most countries worldwide, especially in eastern Europe, South America, and east and southeast Asia. Among people actively injecting drugs, provision of clean needles and opioid substitution reduce HIV-transmission. However, former injecting drug users (fIDUs) are often overlooked as a high risk group for HIV transmission. We compared HIV risk behavior among current and former injecting drug users (IDUs) in Indonesia, which has a rapidly growing HIV-epidemic largely driven by injecting drug use.

Methods : Current and former IDUs were recruited by respondent driven sampling in an urban setting in Java, and interviewed regarding drug use and HIV risk behavior using the European Addiction Severity Index and the Blood Borne Virus Transmission Questionnaire. Drug use and HIV transmission risk behavior were compared between current IDUs and former IDUs, using the Mann-Whitney and Pearson Chi-square test.

Results : Ninety-two out of 210 participants (44%) were self reported former IDUs. Risk behavior related to sex, tattooing or piercing was common among current as well as former IDUs, 13% of former IDUs were still exposed to contaminated injecting equipment. HIV-infection was high among former (66%) and current (60%) IDUs.

Conclusion : Former IDUs may contribute significantly to the HIV-epidemic in Indonesia, and HIV-prevention should therefore also target this group, addressing sexual and other risk behavior.

Background

Worldwide, injecting drug use is estimated to account for just less than one-third of new infections outside sub-Saharan Africa¹. HIV-prevention programs for injecting drug users (IDUs) therefore put emphasis on people actively injecting drugs, especially through needle exchange or opioid replacement. Besides active IDUs, people who have a previous history of injecting drug use (former IDUs) are probably also an important risk group for HIV transmission. However, relatively little is known about this group. Sporadic studies from western countries have shown that former IDUs (fIDUs) may have a high risk of becoming HIV-infected or spreading HIV to others^{2,3}. To our knowledge, no studies on fIDUs have been reported from low- or middle-income countries.

Injecting drug use increased dramatically in the late '90s in Indonesia, acting as the main force driving the HIV-epidemic. Among the general population, the prevalence of HIV-infection is still low (0.3%), but up to 50% or more of IDUs are already HIV-infected⁴. Drug use is illegal in Indonesia, and harm reduction programs, although officially supported by the Indonesian government, only reach a minority of IDUs. Apart from sharing needles, sexual risk behavior is also common among drug users⁵. In three large cities in Indonesia, over two thirds of IDUs were sexually active, of whom many reported having multiple partners (48%) and sex with female sex workers (40%) in the preceding year. Consistent condom use was only reported by 10% of sexually active IDUs⁵.

We know of no reported data concerning HIV risk behavior among fIDUs in Indonesia, and fIDUs receive very little attention in current prevention programs in general. This may seriously limit the success of HIV-prevention focusing on drug injection, as a considerable number of IDUs change from injection to non-injection drug administration or completely abstain from illicit drug use⁶. The prevalence of HIV may be high in fIDUs. Transmission of blood borne viruses may continue to occur through sexual behavior and/or by contaminating equipment that is subsequently used by others for drug use, tattooing and/or piercing^{2,7,8}.

Furthermore, fIDUs may also play an important role in transmitting HIV infections to the general population because, compared with current IDUs (cIDUs), fIDUs have more sexual contact with people who do not use drugs^{9,10}. Hopefully, a better characterization of former IDUs may contribute to improve HIV-prevention. Therefore, the aim of the present study was to explore the characteristics and the risk behavior of former IDUs in Indonesia in comparison with current IDUs.

Methods

Setting and patients

From June to September 2008, 210 IDUs were recruited in Bandung, the capital of West-Java and epicenter of the epidemic of injecting drug use in Indonesia. Respondent driven sampling, a form of peer recruitment, was used for recruitment of IDUs from the community¹¹. With help from local non-governmental organizations involved in outreach to IDUs, three cIDUs and three fIDUs from different parts of Bandung were selected to act as 'seeds' for RDS and invited to a community clinic which has a specific program for IDUs. Following their inclusion in the study, these six seeds were asked to recruit two

other persons injecting drugs, either in the last six months (cIDUs) or longer ago (fIDU), by giving individually numbered coupons. IDUs presenting at the community clinic with the coupons, were asked themselves to recruit two other (current or former) IDUs. This process of recruitment continued until the desired sample size was achieved. Numerical simulations have shown that respondent driven sampling estimates converge to the true values even if the seeds are not drawn as desired¹².

As a part of the RDS process, an incentive was offered for participating in the interview (\$3) and for recruiting two injecting drug using peers (\$2 per eligible peer recruited). After the initial seeds were recruited, only those people who presented coupons were permitted to participate in the study. The study was completely anonymous, but to prevent the same participant from entering the study twice, physical marks such as tattoos, scars, or birth marks were recorded.

Only those candidates who were or had previously been IDUs were eligible to be included in the study. Two outreach workers from non-governmental harm reduction organizations, both with a previous history of drug use, confirmed that the respondents were indeed IDUs. To this purpose they looked for possible needle tracks, asked each respondent to demonstrate how he/she injected drugs, and to clarify specific 'slang' used by IDUs. All IDUs who passed this screening then provided informed consent. The study was approved by the regional medical-ethical committee (The Health Research Ethics Committee, Faculty of Medicine, Padjadjaran University / Dr. Hasan Sadikin General Hospital Bandung) and conducted within the context of program on prevention and treatment of HIV in the context of injecting drug use in Indonesia¹³.

Assessment

The interview was done at the community health center by trained interviewers who assured all participants that their anonymity would be strictly maintained. All participants who completed the interview session received a coupon for free HIV, HBV, HCV and syphilis testing at Hasan Sadikin hospital, Bandung. If found positive for HIV, participants were offered CD4-cell counts, chest X-ray and if needed, antiretroviral and/or syphilis treatment, all free of charge.

The interviewers used two validated questionnaires: the European Addiction Severity Index (EuropASI) and the Blood Borne Virus Transmission Questionnaires (BBV-TRAQ). The EuropASI is an adaptation of the Addiction Severity Index (fifth version).

It is a semi-structured interview which takes about one hour, covering issues that may contribute to patients' substance-abuse problems, such as medical status, employment/ support status, drug/ alcohol use, legal status, family social relationship, and psychiatric problems¹⁴. Participants are asked if they ever used a number of listed drugs regularly (more than 3 times or 2 consecutive days a week).

For regularly used drugs, further information is recorded including the first time the particular drug was used, the duration of use in a life time, the frequency of drug use in the previous 30 days, and drug route of administration¹⁴.

ASI has shown excellent reliability and validity across a range of types of patients and treatment settings in many countries¹⁵. For the translation into Bahasa Indonesia, WHO translation procedures were used¹⁶.

The BBV-TRAQ questionnaire assesses how often injecting drug users participate in specific injecting, sexual and other risk-practices that may expose them to blood-borne viruses. The instrument consists of 34 questions divided in three sub-scales which measure frequency of current risk behavior related to blood to blood transfer (20 questions); sexual practices (8 questions); and other skin penetration activities (6 questions) in the previous month. With respect to possible blood to blood transfer, information is collected about contact with contaminated needles and syringes, other drug injecting equipment sharing and involvement of other people in the drug preparation and injecting process. Questions related to sexual risk behavior address unprotected vaginal, anal, oral, and manual sex with other people, with or without lubricant, and during menstruation or not. Other questions address skin penetration risk behavior (tattooing and piercing), and shared use of toothbrush, razor, and personal hygiene equipment. The administration time for the instrument is short (around 15 minutes), and it has been shown good reliability and validity^{17, 18}.

Data analysis and statistics

A former IDU (fIDU) was defined as a person who reported to have injected an illicit drug at some point in his/ her life, but not to have injected any drugs in the six months prior to the interview^{17, 18}. A current IDU (cIDU) was defined as a person who reported that he/ she had injected any type of illicit drug in the six months prior to the interview^{6, 10}. Data were analyzed both descriptively and inferentially. Descriptive data are presented in terms of percentage, mean, and standard deviation. Subjects engaging in at least one risk taking behavior in a subscale of the BBV-TRAQ were regarded as taking risks in that domain. Data were analyzed inferentially for differences between fIDUs and cIDUs. Pearson Chi-Square was used for dichotomous data and the Mann-Whitney test for non-parametric continuous data. All tests were two-sided, with a P-value of 0.05 or less considered to indicate statistical significance. Analyses were performed with the use of SPSS, version 11.5.

Results

Characteristics of IDUs in Bandung

A total of 210 IDUs were recruited, of whom 194 were men (92%), 92 were fIDUs (44%), and 118 were cIDUs (56%). Thirty-three out of 92 fIDUs (35.9%) were invited by cIDUs, while 34 of 118 cIDUs (30.3%) were invited by fIDUs, showing extensive social linking between the two groups. Most of the demographic characteristics of fIDUs and cIDUs did not differ, except for the length of injecting drug and percentage of those who developed AIDS (table 3.1). The mean age was 28 (± 4) years and most participants had graduated from senior high school and had been employed at some point in the last 3 years. They had started using drugs at a young age (14 (± 3) years). Injection of drugs had typically started 4 years after non-injecting drug administration, and the period of injecting drugs averaged 7 (± 4) years.

	total group (N=210)	fIDUs (N=92)	cIDUs (N=118)	P
Age	27,8 (3,8)	28.1 (4.0)	27.5 (3.8)	0.64
Male gender	92%	89%	95%	0.12
Drug use				0.35
Age of first drug use	14.0 (2.8)	14.2 (3.3)	13.8 (2.2)	0.31
Age of first drug injection	18.0 (3.1)	18.4 (3.1)	17.8 (3.1)	0.17
Years of injecting in life time	7.1 (3.8)	5.5 (3.6)	8.4 (2.4)	<0.01
Marital Status				0.35
Married / remarried	30%	36%	25%	
Widowed	2%	3%	2%	
Separated / divorced	11%	6%	14%	
Never married	57%	55%	59%	
Employment in the past 3 years				0.13
Full time	41%	48%	36%	
Part-time	37%	36%	39%	
Student	5%	5%	4%	
Unemployed or housewife	17%	11%	21%	
Education				0.48
Junior high school or less	6%	4%	7%	
Senior high school	87%	88%	87%	
Undergraduate or higher	7%	8%	6%	
HIV-AIDS				
Ever HIV-tested	75%	71%	78%	0.23
HIV-infected*	63%	66%	60%	0.47
Have developed AIDS**	30%	44%	18%	0.01

Table 3.1. Sociodemographic characteristics of former and current injecting drug users

All data are presented in percentage unless stated otherwise

* n=145; no data available for 12 subjects;

** n=83; no data for 8 HIV-positive subjects

Three quarters of the participants had been tested for HIV and among those tested 63% reported to be HIV-infected. There was no significant association between the cumulative years of drug injecting and HIV-status ($P = 0.47$). One third of those who were HIV-infected reported to have developed AIDS. Although cIDUs had injected for a longer period than fIDUs, HIV-infected individuals in the latter group more commonly reported having AIDS (44% vs 18%; $P=0,01$).

The most used substance by all participants was heroin. Ninety four percent of the total participants had at some point used heroin regularly (at least three times a week or for two consecutive days in a week for more than 6 months). The other most used substances were cannabis, benzodiazepines, and alcohol. More than three quarters of participants had ever used or still used different drugs at the same time (poly drug use) and 70% of the total IDUs had ever used or still used amphetamine or methamphetamine regularly (median 2 years (range less than 1 year until 15 years)).

In the last 30 days, cIDUs had typically used more drugs than fIDUs but neither cIDUs nor fIDUs reported total abstinence in the last 30 days. The most used substances by fIDUs in the last 30 days were alcohol, licit or illicit methadone/buprenorphine while cIDUs mostly used licit or illicit methadone/buprenorphine, heroin, benzodiazepines, and cannabis (table 3.2). Licit or illicit use of methadone or buprenorphin cannot be differentiated with the ASI.

Kind of drug *	life time drug use			drug use in last 30 days		
	fIDU's (N=92)	cIDU's (N=118)	P	fIDU's (N=92)	cIDU's (N=118)	P
Any use of alcohol	91%	97%	0.14	42%	59%	0.03
Alcohol, over treshold **	66%	70%	0.66	26%	42%	0.02
Heroin	99%	100%	0.44	0%	79%	<0.01
Methadone or buprenorphine	33%	65%	<0.01	12%	53%	<0.01
Other opiates	22%	23%	0.87	1%	5%	0.14
Benzodiazepines	66%	79%	0.06	12%	52%	<0.01
Amphetamine	52%	53%	0.89	1%	9%	0.03
Cannabis	84%	87%	0.55	13%	47%	<0.01
Ecstasy (MDMA)	44%	37%	0.40	9%	14%	0.28
More than one substance	78%	83%	0.38	12%	55%	<0.01

Table 3.2. Drug use among former and current injecting drug users

* regular use (more than 3 times or 2 consecutive days a week).

** > 3 drinks in 1-2 hours, > 3 times or 2 consecutive days a week.

Note : Less than three participants used inhalant, hallucinogens or cocaine in the last 30 days.

Risk behavior related to transmission of blood-borne viruses

Blood to blood transfer risk behavior was reported by 76% of cIDUs and 13% of fIDUs ($X^2 = 82,73$; $p < 0,01$) (table 3.3). Risk behavior of ninety cIDUs (76%) was related to sharing of contaminated drug injecting equipment. Current IDUs often reported behavior associated with a very high risk of transmission of blood-borne pathogens, including injecting with another person's used needle or syringe (reported by 15% of cIDUs), re-use of a needle or syringe taken out of a shared disposal/sharps container without using bleaching (9%), and sharp injuries from another person's used needle/syringe (15%).

Risk Behavior	fIDU's (N=92)	cIDUs (N=118)	X ²	P
Blood-blood transfer	13%	76%	82.73	<0.01
Suck or lick a filter which had been used by another person	4%	14%	5.81	0.02
Inject a drug prepared with water which had been used by another person	0%	41%	45.30	<0.01
Been injected by another person who had already injected or assisted in someone else's injection	0%	20%	21.13	<0.01
Receive an accidental needle-stick/prick from another person's used needle/syringe	3%	15%	7.56	<0.01
Re-use a needle/syringe taken out of a shared disposal/sharps container	0%	9%	8.26	<0.01
Sexual risk behavior	42%	56%	3.57	0.06
Engaged in unprotected vaginal sex with another person	35%	47%	2.98	0.08
Engaged in unprotected vaginal sex with another person during menstruation	11%	20%	2.90	0.09
Engaged in unprotected anal sex with another person	7%	8%	0.10	0.76
Tattoo or piercing	52%	53%	0.02	0.90
Tattooed by someone who was not a professional tattooist	4%	15%	6.56	<0.01
Been pierced by someone who was not a professional piercer	10%	14%	0.96	0.327
Use another person's toothbrush	3%	14%	7.45	<0.01

Table 3.3. Risk behavior among former (fIDUs) and current injecting drug users (cIDUs) in the last 30 days.

cIDUs also reported behavior associated with a somewhat lower risk of transmission. For example, they had exposure to contaminated drug injecting equipment included shared use of a tourniquet (43%); injecting a drug prepared with water previously used by another person (41%); handling another person's used needle or syringe when wounded at his or her hand (34%); wiping his/her own injection site with an object that had been used by another person (27%); touching his/her own injection site soon after 'assisting' another person with their injection (26%); and injecting a drug that was prepared immediately after 'assisting' another person with their injection but without washing hands between activities (26%).

While fIDUs did not inject anymore, 13% still had some risk of blood borne pathogens transmission, especially through accidental needle stick injuries and sucking or licking and other handling of another person's used needle/syringe.

Interestingly, benzodiazepine use was more common among IDUs engaging in risky injecting behavior, 56% vs. 39% among cIDUs ($X^2 = 2,26$; $P = 0,19$) and fIDUs (33% vs 9%; $X^2 = 5,99$; $P = 0,03$). Injecting risk behavior was not associated with use of alcohol, cannabis or methadone/ buprenorphin (data not shown). Sexual risk behavior of some form was reported by 56% of cIDUs and 42% of fIDUs ($X^2 = 3,57$; $P = 0,06$).

The most common sexual risk behavior for cIDUs and fIDUs was unprotected vaginal sex (47% respectively 35%, NS); reported unprotected anal sex was much lower (8% respectively 7%, NS). No statistical significant differences were found between former and current IDUs regarding oral and manual sex (data not shown). Excessive alcohol use was more common in IDUs engaging in risky sexual behavior, both among cIDUs (51% vs 33%; $X^2 = 3,86$; $P = 0,06$) and fIDUs (46% vs 11%; $X^2 = 14,14$; $P < 0.01$). Other risk behavior such as tattooing and piercing, which confer a much lower risk of HIV transmission compared to needle-sharing, was reported by half of all respondents (52% of fIDUs and 53% of cIDUs).

Discussion

This cross-sectional study from Indonesia shows a high prevalence of HIV-infection among relatively young and well-educated former and current IDUs. Current IDUs obviously had much higher risks of viral transmission related to injecting drugs, but also former IDUs had risks related to blood to blood transmission. Importantly, both groups engaged in substantial risks related to sexual transmission of HIV. Almost half of respondents in our study were former IDUs, showing that this group may contribute significantly to HIV transmission.

Injecting drug use is the main factor driving the HIV-epidemic in Indonesia. In a large cohort of HIV patients in our setting, two thirds had a history of IDU¹⁹. In line with this finding, the prevalence of HIV-infection among fIDUs and cIDUs in this study was high (66% respectively 60%), similar or slightly higher compared with previous local and national data [4]. The prevalence of AIDS was higher among fIDUs; concern about their general health or the development of AIDS may cause them to move from injecting drugs⁶.

Injecting with needles or syringe from other people (15%) or from shared disposal/sharps containers without bleaching (9%) was reported by a substantial proportion of IDUs, although lower compared to previous research in Indonesia (24% - 80%)^{5, 20}.

The high rate of needle stick injuries is no surprise given the fact 40% of IDUs fail to discard used needles safely²¹. Risk related to injecting drugs was especially high in cIDUs, but fIDUs are experience certain things (e.g. needle sticks or sharing of injecting equipment) which may have a low risk of HIV-transmission, but which may pose a significant risk of transmitting HCV. This is important, as the prevalence of HCV is very high among IDUs in this setting; among 633 HIV patients with a history of IDU 87.7% were HCV-infected¹⁹.

Both among current and former IDUs, sexual risk behavior may contribute significantly to

HIV transmission. Sexual risk behavior was equally high in both groups, which is in contrast with previous studies reporting associations between injecting drug use and unsafe sex^{22, 23}. Condom use among IDUs has found to be inconsistent and especially low with sex workers and other risk groups for HIV transmission²⁰. As IDUs often have multiple sex partners, including sex workers, HIV transmission may easily spread to people outside the IDU community.

Heroin was the most frequently used drug among IDUs in this sample but many reported use of cannabis, benzodiazepines and alcohol as well, in line with reports from China, Thailand, Ukraine, Lithuania, and Poland²⁴. The use of methadone or buprenorphine among c-IDUs was higher compared to fIDUs. The EuropASI questionnaire does not allow us to verify whether this was as part of substitution treatment or not. Both drugs are officially registered in Indonesia for substitution treatment but illegal use is quite common. Buprenorphine injection has been reported in many countries including Indonesia, and can be regarded as a response to inadequate care, rather than simply as misuse²⁵.

Alcohol abuse was common, and was associated with risky sexual behavior, as has been reported previously²⁶. The same has been reported for methamphetamine and amphetamine use²⁷, but this seems still relatively rare in this setting. Our study also showed a high prevalence of tattooing and piercing in former and current IDUs, both of which have may lead to transmission of HIV and viral hepatitis^{8, 9, 28}.

This study suffers from the limitations of a cross-sectional study in a population which is difficult to reach, and the question is therefore how representative the samples are. By using RDS, we tried to minimize this risk^{12, 29}. Numerical simulations have shown that the possible bias, even if the seeds are not drawn randomly, is extremely small (0.3%) for all sample sizes greater than 200¹². Still, some IDUs who are not in the social networks with these participants can not be recruited through respondent driven sampling³⁰.

Conclusions

In conclusion, this study from Indonesia shows that former IDUs, when compared to current IDUs, may have similar high HIV prevalence rates and high sexual risk behavior. Specific programs focusing on the reduction of sexual risk behavior are needed among former and current IDUs, in order to prevent further transmission to the general community. Drug-use treatment and interventions that examine the relationship between drug use and sexuality should be conducted. In addition, earlier HIV treatment may lower transmission among IDUs by reducing the 'community viral load'³¹. We have recently shown that patients with a history of injecting drug use in our setting have a similar clinical and virological response to anti-retroviral treatment compared to non-IDUs¹⁹. Finally, evidence-based prevention should also be targeted at schoolchildren and young adolescents as injecting drug use starts at an early age in this setting.

Competing interest

None of the authors had any potential conflicts of interest.

Author's Contribution

SI made and carried out the research protocol, performed the statistical analysis, and drafted the manuscript. DB and LP participated in making the research protocol. TH and IS participated in the design of the study. RvC, AvV, CdJ conceived of the study, and participated in its design and coordination and helped to draft the manuscript. All authors read and approved the final manuscript.

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chapter 4

Successful testing and treating HIV/AIDS in Indonesia depends on the addiction treatment modality

In review

Abstract

Background : In many settings, people who inject drugs (PWID) have limited access to HIV care. Substance abuse treatment (SAT) can be used as the entry-point to HIV programs. The aim of this study is to describe the characteristics of the PWID who had accessed SAT and determine which SAT modality associates significantly with HIV programs.

Methods : PWID were recruited by respondent-driven sampling in urban setting in Java, Indonesia and interviewed with the Addiction Severity Index, Blood Borne Virus Transmission Questionnaires, and Knowledge on HIV/AIDS.

Results : Seventy-seven percent of 210 PWID had accessed SAT at least once. PWID who had accessed a SAT modality reported more severe drug problems. The most widely used SAT were opioid substitution (57%) and traditional/faith-based treatment (56%). Accessing substitution treatment (adjusted OR=5.8; 95%CI:2.5,13.9) or residential drug-free treatment (adjusted OR=3.7;95%CI: 1.4, 9.7) was significantly associated with HIV testing, whereas accessing substitution treatment (adjusted OR 3.8 (1.9 – 7.5)) or other medical services (adjusted OR 3.1 (1.1 – 8.7)) was significantly associated with HIV treatment. There was no significant association between accessing traditional/ faith based treatment and HIV testing and treatment.

Conclusion : Efforts should be made to link HIV services with traditional/faith-based treatment to increase the coverage of HIV program.

Keywords : HIV, addiction treatment, access to care, people who inject drugs

Introduction

The worldwide number of people who inject drugs (PWID) in 2007 was estimated 15.9 million while probably 3 million of them were infected with HIV¹. Injecting drug use is also estimated to account for 30% of all new HIV infections outside sub-Saharan Africa². Apart from HIV, PWID are often affected by co-occurring problems such as other infectious diseases including hepatitis and tuberculosis, psychiatric problems, and other substance use disorders. PWID with these co-morbidities are likely to engage in high-risk behaviors, and when untreated, continue to fuel the HIV epidemic³. In addition, engagement in high-risk sexual behavior may lead to further spreading of HIV into the general community⁴. Antiretroviral treatment significantly reduces HIV transmission⁵, however different studies showed that PWID still had very limited access to HIV care^{6,7}.

Clinicians and policymakers have underlined the crucial role of evidence-based substance abuse treatment (SAT) in HIV prevention and care programs^{8,9}. Many SAT modalities do have the capacity of offering counseling and testing for HIV, providing interventions to reduce risk behavior, referring patients for HIV treatment, or prescribing and monitoring HIV treatment^{8,9}. However, PWID often have poor access to the regular SAT since drug use is illegal and highly stigmatized¹⁰. PWID and their families often hide the drug-related problems and avoid the regular SAT, as this may further increase the social ostracism faced by the families. Because of unawareness or absence of easily accessible treatment, particularly in resource-limited countries, PWID and family members may prefer to approach alternative service providers such as faith based treatment¹¹.

In traditional or faith based treatment it is believed that drug addiction is mostly due to a lack of religiosity. The therapy emphasizes for instance the important role of remembrance of Allah because only through remembrance of Allah, the self will always be aware and alert about the real purpose of this life. Only 30% of all Indonesian addiction professionals consider addiction as a brain disease, whereas about 70% consider faith-based and long-term residential treatments to be the most appropriate treatment modalities¹². Spiritual leaders or people providing spiritual/ faith based treatment may however be insufficiently informed about medical problems such as blood borne infections like HIV and hepatitis B/C. Communication and training of providers of spiritual/ traditional faith based treatment services may increase access to HIV care. In addition, faith based organizations might contribute to daily care for HIV-infected patients. Faith based organizations basically operate on the basis of religious missions. In Indonesia, faith based organizations usually have a large number of followers and/or members capable of dissemination of knowledge throughout the country¹³, so influencing them to promote HIV testing and treatment could have a large effect.

In Indonesia, injecting drug use increased dramatically in the late '90s, acting as the main force driving the HIV-epidemic. Among the general population, the prevalence of HIV-infection is still low (0.3%) but it is 50% or higher among PWID¹⁴. PWID in Indonesia engage in high-risk behavior, both through needle sharing and unprotected sex^{15,16}. In response to the problems of drug use and HIV, specific intervention programs have been developed in Indonesia. The coverage of these programs remains very low: only 1% of the PWID are currently enrolled in Methadone Maintenance Treatment (MMT) programs; and only 6% of the HIV-infected PWID have been treated with antiretroviral (ARV) drugs⁷. The start of the

services was funded by government and donor organizations, some services are still subsidized by the government. In Bandung (Hasan Sadikin Hospital), opioid substitution treatment and HIV services can be provided at the methadone clinic since 2009¹⁷. Integration of opioid substitution treatment and ARV in other settings have not been fully established although at some places, both services are provided in the same building/hospital¹⁸.

The aim of the present study was therefore to investigate possible explanations of the low coverage of HIV testing in PIWD by comparing PWID who had accessed SAT and those who had not in terms of socio-demographic characteristics, health problems and treatments, and risk behavior for HIV transmission. Furthermore, the types of SAT accessed by PWID was explored and determined to reveal which SAT was associated with uptake of HIV testing and HIV treatment.

Methods

Participants

From June to September 2008, 210 PWID were recruited from all sub-districts in Bandung, the capital of West-Java and epicenter of the epidemic of injecting drug use in Indonesia. Respondent-driven sampling, a form of peer recruitment, was used for recruitment of PWID from the community¹⁹. All PWID who passed this screening then provided informed consent. The study was approved by the regional medical-ethical committee (87/FKUP-RSHS/KEPK/Kep./EC/2008).

Assessment

The interview was conducted at the community health center by trained interviewers who assured all participants that their anonymity would be strictly maintained. The interviewers used three validated questionnaires: the European Addiction Severity Index (EuropASI), Blood Borne Virus Transmission Questionnaires (BBV-TRAQ), and Knowledge Questionnaire on HIV/AIDS.

The EuropASI is an adaptation of the Addiction Severity Index (ASI) 5th version. ASI has shown excellent reliability and validity across a range of types of patients and treatment settings in many countries²⁰. For the translation into Bahasa Indonesia, WHO translation procedures were used²¹. ASI is a semi-structured interview which takes about one hour, and covers medical status, including questions about HIV testing and treatment, employment/support status, drug/alcohol use, legal status, family/social relationships, and psychiatric problems. Each of these areas is examined individually by collecting information regarding the frequency, duration, and severity of symptoms of problems both historically over the course of the patient's lifetime, and during the 30 days prior to the interview^{22, 23}.

In order to measure addiction severity in a more objective way, the selective combination of items from each of the ASI problem areas were used to calculate the composite score, which can be used as a general measure of patient status in each area. These measures have shown reliability and validity in several settings²⁴. The information regarding the use of substance abuse treatment and HIV program were based on questions in EuropASI. They were asked whether in their life time they had ever accessed the type of substance abuse treatment or not and ever had HIV testing and treatment or not.

The BBV-TRAQ questionnaire assesses how often injecting drug users participate in specific injecting, sexual, and other risk-practices that may expose them to blood-borne viruses. The instrument consists of 34 questions divided into three sub-scales which measure frequency of current risk behavior related to blood-to-blood transfer (20 questions); sexual practices (8 questions); and other skin penetration activities (6 questions) in the previous month. The administration time for the instrument is short (around 15 minutes), and it has shown good reliability and validity²⁵.

Knowledge on HIV/AIDS was evaluated using a questionnaire which included 10 questions that address three areas of HIV/AIDS knowledge: (a) general knowledge concerning HIV/AIDS; (b) knowledge concerning HIV transmission; and (c) knowledge of prevention. The number of correct responses for the total scale and for each subscale was computed and higher scores indicate more knowledge. The reliability was high (Cronbach's $\alpha = .97$)²⁶.

Data analysis and statistics

Descriptive data were presented in terms of percentage, mean, and standard deviation. Data were analyzed inferentially for differences between those who had not accessed, and those who had accessed SAT in his/her life time. Pearson Chi-Square was used for dichotomous data and the Mann-Whitney test for non-parametric continuous data. All tests were two-sided, with a P-value of 0.05 or less considered to indicate statistical significance. All subjects that have accessed SAT were included in a multivariate logistic regression analysis to identify which type of SAT was associated with HIV testing and HIV treatment. In the adjusted model, all types of substance abuse treatments were included as variables. Analyses were performed with the use of SPSS, version 15.

Results

A total of 210 PWID came from all sub-districts area in Bandung indicating the representativeness of the sample. Seventy seven percent of them (161) had visited any type of SAT. Socio-demographic data did not differ between those who had not accessed SAT and those who had accessed SAT (Table 4.1). The mean age was 28 (SD 4) years and most participants had graduated from senior high school or higher education.

Characteristics	treatment :		X ² /U	P
	No (N=48)	Yes (N=162)		
Male gender, N (%)	46 (96)	148 (91)	1.05	0.54
Age, mean (SD)	27 (5)	28 (3)	1.037	0.32
Education, N (%)			8.93	0.6
Junior high school or lower	5 (10)	7 (4)		
Senior high school	40 (84)	124 (77)		
Diploma or higher	3 (6)	31 (19)		

Marital status, N (%)			3.63	0.60
Married	16 (33)	47 (29)		
Widowed, separated or divorced	4 (8)	24 (15)		
Never married	28 (59)	91 (56)		
Income from employment in the last 30 days (1000 rupiah), mean (SD)	969 (1,730)	1,191 (2,639)	0.87	0.59
Drug use				
Age first inject, mean (SD)	18 (4)	18 (3)	6.07	0.34
Inject in life time, mean (SD)	5 (4)	8 (4)	0.27	<0.01
Inject in the last 30 days, N (%)	17 (35)	89 (55)	5.65	0.02
Overdose, N (%)	11 (23)	88 (54)	1.466	<0.01
Cigarettes smoked in the last 30 days, mean (SD)	370 (205)	459 (252)	2.05	0.03
Drug composite score (0-1), mean (SD)	0.13 (0.10)	0.18 (0.13)	3.12	0.03
Alcohol composite score (0-1), mean (SD)	0.25 (0.18)	0.16 (0.20)	2.70	<0.01
Risk behavior, N (%)	42 (88)	124 (77)	2.68	0.11
Injecting risk behavior, mean (SD)	5 (10)	5 (8)	0.27	0.95
Sexual risk behavior, mean (SD)	2 (3)	3 (5)	6.30	0.23
Other risk behavior, mean (SD)	3 (4)	2 (3)	0.06	0.26
Knowledge on HIV (0-10), mean (SD)	8 (2)	9 (2)	1.57	0.02
Medical condition				
Have chronic problem, N (%)	24 (50)	64 (40)	1.68	0.24
Tested HIV, N (%)	23 (48)	134 (83)	2.377	<0.01
HIV ⁺ , N (%), (N total = 157)	9 (43)	82 (66)	4.44	0.06
AIDS ⁺ , N (%), (N total = 91)	1 (11)	24 (29)	3.04	0.44
HIV treatment, N (%), (N total = 91)	3 (33)	51 (62)	0.28	0.15
Tested Hepatitis C, N (%)	21 (44)	104 (64)	6.43	0.01
Hepatitis C ⁺ , N (%), (N total = 125)	9 (43)	71 (68)	4.90	0.04
Medical composite score (0-1), mean (SD)	0.39 (0.20)	0.43 (0.22)	3.40	0.54
Body Mass Index (BMI) (kg/m ²)	20 (2)	21 (3)	4.72	0.02
Psychiatric condition in life time				
Depression, N (%)	28 (58)	96 (59)	0.01	100
Anxiety, N (%)	41 (85)	129 (80)	0.41	0.25
Memory problems, N (%)	35 (73)	119 (74)	0.01	100
Hallucination, N (%)	15 (31)	63 (39)	0.93	0.40

Characteristics (follow-up)	No (N=48)	Yes (N=162)	X ² /U	P
Trouble in controlling violent, N (%)	27 (56)	88 (54)	4.63	0.87
Ever treated for psychiatric problems, N (%)	8 (17)	53 (33)		
Psychiatric composite score (0-1), mean (SD)	0.24 (0.16)	0.17 (0.20)	3.63	0.03

Table 4.1. The comparison of socio-demographic characteristics, drug use, medical, and psychiatric conditions of people who inject drugs who had never accessed and ever accessed substance abuse treatment.

PWID from both groups had started using injecting drugs at a young age (18, SD 3 years). Those who had accessed SAT had more severe drug problems compared to those who had never accessed SAT. This was indicated by a longer period of injecting drugs, higher prevalence of drug use in the last 30 days, more episodes of drug overdose, more cigarette smoking, and a higher drug composite score. Interestingly, alcohol problems were more frequent among those who had never accessed SAT.

Despite the high score on knowledge about HIV, especially in PWID who had already accessed SAT, 78% of the respondents still engaged in risky behavior for HIV transmission. There were no differences in the percentage and frequency of injecting, sexual, and other risk-taking behaviors between the two groups. Those that had accessed SAT also did not differ with regard to the severity of medical and psychiatric conditions, nor in HIV prevalence rates.

Of all PWID, 75% have been tested for HIV, and 60% of HIV-positive PWID subsequently received antiretroviral treatment. Those who had accessed SAT were more likely to be tested for HIV (83% vs 48%) and hepatitis C (64% vs 44%), and treated for HIV (62% vs 33%), however due to the small numbers, the difference on HIV treatment were not statistically significant. Psychiatric treatment was not frequently given since 95% of all patients experienced psychiatric problems only 30% received such treatment. Those accessing SAT were more often treated for psychiatric disorders (33% vs 17%).

The most widely accessed SAT were substitution treatment (56%) and traditional/faith-based treatment (57%) (Table 4.2). On average, PWID reported 5 (range: 1 - 27) episodes of accessing SAT. Table 4.3 showed that accessing substitution or residential drug-free treatment increased the probability to be tested for HIV (OR=5.8;95% CI: 2.5, 13.9) and (OR=3.7;95% CI: 1.4,9.7), respectively. Accessing substitution treatment (OR= 3.8; 95% CI: 1.9, 7.5) or other medical services (OR =3.1; 95% CI: 1.1, 8.7) increased significantly the probability of HIV treatment.

Substance abuse treatment modalities (N = 162)	%
Outpatient detoxification	22
Residential detoxification	26
Outpatient substitution	57
Outpatient drug-free	12
Residential drug-free	36
Day care	7
Psychiatric care	15
Other medial services	13
Traditional/faith-based treatment	56

Table 4.2. Types of substance abuse treatment modalities ever accessed by people who inject drugs.

Type of HIV programs in several types of substance abuse treatment	Unadjusted OR (95%) CI	Adjusted OR (95%) CI
HIV testing		
Outpatient detoxification	2.4 (0.9 - 6.4)	1.1 (0.3 - 3.4)
Residential detoxification	9.0 (2.1 - 38.7) ^a	4.0 (0.8 - 19.1)
Outpatient substitution	6.6 (2.9 - 15.0) ^a	5.8 (2.5 - 13.9) ^a
Outpatient drug-free	2.0 (0.6 - 7.2)	1.1 (0.2 - 4.6)
Residential drug-free	3.9 (1.6 - 9.7) ^a	3.7 (1.4 - 9.7) ^a
Psychiatric care	2.7 (0.8 - 9.5)	1.4 (0.4 - 5.7)
Other medial services	2.3 (0.7 - 8.1)	1.5 (0.3 - 6.8)
Traditional/faith-based treatment	1.6 (0.9 - 3.2)	0.9 (0.4 - 2.0)
HIV treatment		
Outpatient detoxification	1.7 (0.8 - 3.5)	0.9 (0.3 - 2.2)
Residential detoxification	2.0 (1.0 - 4.0) ^b	0.9 (0.4 - 2.2)
Outpatient substitution	3.6 (1.9 - 6.7) ^a	3.8 (0.4 - 7.5) ^a
Outpatient drug-free	2.1 (0.8 - 5.4)	1.9 (0.7 - 5.5)
Residential drug-free	1.7 (1.0 - 3.6) ^b	2.0 (0.9 - 4.1)
Psychiatric care	2.1 (0.9 - 4.8)	1.8 (0.7 - 4.9)
Other medial services	2.7 (1.1 - 6.6) ^b	3.1 (1.1 - 8.7) ^b
Traditional/faith-based treatment	1.1 (0.3 - 2.1)	0.6 (0.3 - 1.3)

Table 4.3. Associations between types of substance abuse treatment with HIV testing and HIV treatment (N = 162).

Note : Day-care treatment was not included in multivariate analyses because one of the blocks in a two times two table was zero.

Discussion

In this cross-sectional survey from Indonesia, a group of relatively young and well-educated PWID showed that most of them had accessed SAT at least once, especially substitution and traditional/faith-based treatment. Importantly, those who had accessed substitution treatment were more likely to be tested and treated for HIV, compared to those accessing other types of SAT.

In general, the percentage of the utilization of SAT by PWID in this study was higher compared to other studies^{7, 27}. The reason for this high percentage can be caused by a different period of time used, and the inclusion of traditional/faith-based treatments in this study. A recent review concluded that information regarding other SAT besides substitution treatment was much less commonly available in many countries, and the inconsistencies and imperfect data on the estimation of PWID population limited the calculation of the coverage of the programs⁷.

The socio-demographic characteristics of the patients in this study were comparable with PWID in other big cities in Indonesia²⁸. They are relatively young and well educated since almost all (94%) had completed their senior high school or higher education while only 22,6 % of the citizens in Indonesia have completed senior high school²⁹. Their income was slightly higher than the minimum wage according to the regional standard³⁰. There was no correlation between the choice of SAT modality and the educational level¹². PWID who had accessed SAT had more severe drug problems is in line with other studies which found that most PWID accessed treatment only when they were in emergency or crisis^{31, 32}. Alcohol problems were more common among PWID who had never accessed SAT.

Although it has been reported that alcohol is associated with risky sexual behavior³³ we have found no differences in sexual risk-taking behavior between those who had and had not accessed SAT. This may indicate that other drugs also influence the sexual risk behavior³⁴. The percentage of PWID with injecting and sexual risky behavior was high and in line with other studies^{16, 35, 36}. However, the frequency of such risky behavior was lower compared to previous studies^{37, 38}.

We have found that PWID who had accessed SAT had better knowledge on HIV, better access to HIV testing and treatment, HCV testing, and psychiatric treatment. This finding indicates that besides handling drug problems, SAT can be used as an entry point for other harm-reduction programs and health services in Indonesia, similar to studies from other countries^{8, 9}. Despite the differences between those that had not accessed SAT, and those who had, psychiatric treatment in general was grossly underutilized. It has been reported before that people who use drugs with psychiatric symptoms rarely want to be referred to the specialized facilities for psychiatric treatment³⁹. It is however important to address this issue, since psychiatric co-morbidity can reduce the effectiveness of SAT program⁴⁰. That is why interventions to increase referral and uptake from/to psychiatric treatment should be addressed^{41, 42}.

Among PWID who had accessed SAT, substitution treatment was the most widely accessed treatment. The percentage of the utilization of substitution treatment in this study was in line with other national reports^{35, 36}. It was shown in this study that the chance to be tested

and treated for HIV was most likely in those who had accessed substitution treatment. The integration of HIV programs in substitution treatment indicated effective results^{17, 43}, and there were no differences in response to HIV treatment between PWID and the non-PWID groups⁴⁴, indicating the importance of integrating drug and HIV treatment programs. The second most widely used SAT modality was traditional/faith-based treatment. Other studies have reported the frequent utilization and satisfaction of traditional/faith-based treatments by PWID and HIV-infected patients⁴⁵⁻⁴⁷. Belief in spiritual healing may however also interfere with adherence to antiretroviral treatment⁴⁸. Therefore, despite the debate on the effectiveness of this approach⁴⁹, close collaboration between drug-related interventions, HIV programs, and traditional/faith-based treatment is required to identify common goals and to ensure successful treatment⁴⁸.

Our present study suffers from the general limitations of a cross-sectional study in a population which is difficult to reach, raising the question how representative the samples are. By using RDS, this risk can be minimized⁵⁰. Numerical simulations have shown that the possible bias, even if the seeds are not drawn randomly, is extremely small (0.3%) for all sample sizes greater than 200⁵⁰. Still, some PWID who are not in the social networks with these participants cannot be recruited through RDS⁵¹. It is not possible to know the number of accessing certain substance abuse treatment or which combination has the significant association with HIV program since there are too many possible combinations with limited number of sample. By using multivariate analysis and adjusted the odds ratio we can differentiate which type of substance abuse treatment had the highest association with HIV programs. Furthermore, the generalization of the results to the overall condition in Indonesia should be carefully considered, since there were only 49 opioid substitution therapy sites in Indonesia⁵², mostly distributed in the big cities, while it was estimated that there were more than 219,000 PWID⁵³.

Conclusion

PWID who had accessed SAT had better access to HIV testing, HIV treatment, and other treatment programs compared to those who had not accessed SAT. These findings underline the role of the SAT in HIV prevention and care. The coverage of HIV interventions for PWID may also be improved by introducing HIV programs to other types of SAT services beside substitution treatment, such as traditional/faith-based treatment.

Conflicts of Interest

There are no conflicts of interest.

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chapter 5

Severity of psychiatric and physical problems is associated with lower quality of life in methadone patients in Indonesia

Iskandar S, van Crevel R, Hidayat T, Siregar IMP, Achmad TH, van der Ven AJ, De Jong CAJ. Severity of Psychiatric and Physical Problems is Associated with Lower Quality of Life in Methadone Patients in Indonesia. *Am J Addict* (in press).

Abstract

The goal of methadone maintenance treatment (MMT) is to reduce the harm and to improve patients' quality of life. However, the quality of life (Qol) is also influenced by other co-occurring disorders. Data regarding the Qol and the co-occurrence of these disorders is lacking in low-middle income countries. We therefore describe the prevalence of physical, psychiatric, and drug abuse co-occurring disorders among MMT patients in Indonesia and determine the association between the severity of the co-occurring disorders and the Qol. Data were collected in 112 IDUs attending a MMT program in West Java, Indonesia, using validated questionnaires, medical records and laboratory testing. For comparison, 154 IDUs not enrolled in MMT were recruited by respondent driven sampling. The most frequent co-occurring disorders were hepatitis C (92%), HIV (77%), benzodiazepine abuse (56%), and anxiety disorders (32%). IDUs in MMT had one (26%), two (47%) or three (27%) co-occurring disorders. Higher severity in psychiatric and physical problems was associated with poorer Qol. IDUs not enrolled in MMT had similar co-occurring problems. The prevalence of co-occurring disorders in IDUs in Indonesia is high therefore comprehensive treatment, especially focusing on the common co-occurring disorders should be provided in MMT to improve the Qol.

Introduction

Worldwide, an estimated 11 to 21 million people inject drugs. Because of this, injecting drug abuse is responsible for one third of HIV transmission outside Africa, especially in parts of Eastern Europe, South America, and East and Southeast Asia^{1,2}. Opioids, such as heroin is one of the most used injecting psychoactive substances. Opioids are powerful drugs that can induce a sense of well-being, deliver a boost to self-esteem and increase tolerance to pain. People taking opioids, whether for recreational use or for a medical condition, may become dependent on these drugs³.

Opioid substitution therapy with methadone or buprenorphine reduces injecting drug abuse, unsafe injection practices, unsafe sexual practices, and HIV transmission^{4,6}, and improves quality of life⁷⁻⁹. However, in many countries, the coverage and retention of opioid substitution is still limited⁹⁻¹¹. Some studies have shown that physical¹² and psychiatric^{13,14} co-occurring disorders, and drug abuse^{15,16} reduce the effectiveness of the methadone maintenance treatment. Lack of proper diagnosis and treatment of these co-occurring disorders can also be of influence on methadone dose and because of this it can cause serious side effects¹⁷⁻²⁰.

Injecting drug abuse increased dramatically in the late '90s in Indonesia, acting as the main force driving the HIV-epidemic²¹. Methadone maintenance treatment was therefore established in Indonesia in 2003 by the WHO and the Ministry of Health in two pilot projects. The expansion of methadone was initiated in 2006 however until now, the retention and the coverage of the MMT programs remains very low²². Only 1% of injecting drug abusers (IDUs) is covered by MMT programs while only 6% of the HIV-infected IDUs have received anti retroviral treatment (ART)¹.

Care for co-occurring problems will increase the effectiveness and higher utilization of services⁶ and integrated services should be established based on the patients' characteristics and problems²³. Furthermore, one of the parameters that can be used to measure functioning, well being, and life satisfaction of patients is health related quality of life²⁴. Quality of life can also be used for planning clinical care of individual patients; for assessment of the health needs of populations; and for resource allocation²⁵.

Data regarding the co-occurring disorders and its correlation with the quality of life (QoL) is lacking in low-middle income countries. Therefore, the aim of the present study was to determine the prevalence of co-occurring physical, psychiatric, and drug abuse disorders in patients in a MMT program and to identify the association between the severity of the co-occurring disorders and the QoL. As methadone clients may constitute a selected group of IDUs with more severe co-occurring disorders, community IDUs were examined for comparison.

Methods

Participants

Methadone patients

All IDUs (n= 188) enrolled in a hospital-based MMT program from January 2008 until December 2010 in Bandung, the capital of West-Java and epicenter of the epidemic of

injecting drug abuse in Indonesia were asked to participate in this study. Participation was voluntary and informed consent was given by 112 patients (60%) before the interview.

Methadone sample and community sample

From June to September 2008, 210 IDUs were recruited in Bandung as well, through respondent driven sampling (RDS), a form of peer recruitment²⁶. For details regarding the process of RDS, we refer to our previous study²⁷. From this group, 60 (29%) had never utilized drug substitution treatment, 94 (45%) had previously entered a drug treatment program but not in the last 30 days, and the rest (26%) were in outpatient substance abuse treatment.

All IDUs provided informed consent and the study was approved by the regional medical-ethical committee (The Health Research Ethics Committee Faculty of Medicine UNPAD-Dr. Hasan Sadikin General Hospital Bandung). The study was conducted within a program on prevention and treatment of HIV in the context of injecting drug abuse in Indonesia²⁸.

Assessment

Interviewing was done by trained interviewers who assured all participants that their anonymity would be strictly maintained. In the community sample, the interviewers used the European Addiction Severity Index (EuropASI). In the methadone clinic, more detailed information was collected using the EuropASI, the Mini International Neuropsychiatric Interview (MINI), and the EuroQol-5D (EQ-5D). Besides that, laboratory results were retrieved from medical records.

The EuropASI has shown excellent reliability and validity across a range of types of patients and treatment settings in many countries²⁹. For the translation into Bahasa Indonesia, WHO translation procedures were used³⁰. ASI is a semi-structured interview which takes about one hour, covering medical status, employment/ support status, drug/ alcohol abuse, legal status, family/ social relationship, and psychiatric problems³¹. Each of these areas is examined individually by collecting information regarding the frequency, duration, and severity of symptoms of problems both historically over the course of the patient's lifetime and during the thirty days prior to the interview.

Within each of the problem areas, the EuropASI provides a 10-point, interviewer-determined severity rating of lifetime problems (0 (no real problem) to 4-5 (moderate problem, some treatment indicated) to 8-9 (extreme problem, treatment absolutely indicated) and a 4-point, client rating scale for problem & treatment need in the last 30 days (0 (Not at all), 1 (Slightly), 2 (Moderately), 3 (Considerably), 4 (Extremely))³². In order to measure addiction severity in a more objective way, the selective combination of items from each of the ASI problem areas were used to calculate the composite score/severity index (0-1), which can be used as a general measure of patient status in each area. These measures have shown reliability and validity in several settings³³.

The MINI, a brief interview based upon the ICD10 criteria, was used to screen for psychiatric disorders. It assesses current and lifetime psychiatric disorders³⁴. The questions are precise and carefully worded, requiring only 'yes' or 'no' answers.

The MINI diagnostic framework allows for multiple mental disorders, and distinguishes current mental disorders from those arising at an earlier stage of the subject's life³⁵. It is currently available in over 40 languages, including Indonesian.

The EuroQol-5D (EQ-5D) assesses five different domains of general health and functioning (i.e. mobility, self-care, usual activities, pain/discomfort, and anxiety/depression) along a 3-point scale (1=no problems, 2=some problems, 3=extreme problems). The scores for the five domains are then converted to compose a single summary index using a formula that is based upon EQ-5D evaluations for the general population (the UK algorithm was used to calculate the index as it has been used in numerous international studies, including the field of mental health). This EQ-5D index measures objective Qol and spans a scale from $-.594$ (state "33333") to 1.0 (perfect health) with "as bad as being dead" by convention at 0. Therefore, all states with a negative value are considered as worse than dead. Patients were also asked to rate their overall health related Qol on a visual analogue scale (EQ-5D VAS) consisting of a vertical line ranging from 0 (worst imaginable health status) to 100 (best imaginable). The EQ-5D VAS score therefore represents the subjective Qol.¹⁴³⁶⁻³⁸.

Data analysis and statistics

Descriptive data are presented in terms of percentage, mean, and standard deviation. The differences between methadone patients and IDUs in the community who never accessed drug treatment and ever accessed drug treatment but not in the last 30 days and the difference between HIV-positive and HIV-negative patients were analyzed using Pearson Chi-Square for dichotomous data and Kruskal Wallis or Mann-Whitney test for continuous data. All tests were two-sided, with a P-value of 0.05 or less considered to indicate statistical significance. To identify whether the co-occurring disorder groups had an impact on their subjective and objective Qol, a multivariate analyses of variance (MANOVA) was conducted. Forced entry multiple regression analyses using physical, psychiatric, and drug abuse severity index were then undertaken to determine the association between the severity of co-occurring disorder and the objective and subjective Qol. Analyses were performed with the use of SPSS, version 15.

Results

Co-occurring disorders and its correlation with quality of life among methadone clients

Data from ASI-X, MINI, and laboratory test showed that 105 out of the 106 patients from the MMT program experienced co-occurring disorders (figure 5.1). Seventy-seven patients (73%) had more than one co-occurring problems and the most frequent co-occurring disorders were chronic physical problems.

The mean of the subjective Qol (EQ-5D VAS) was 73 (range 30 to 100) and was worst among patients with triple co-occurring disorders (physical, psychiatric, and drug abuse) (table 5.1). The mean of the objective Qol (EQ 5 D index) was 0.83 (SD 0.22) and the lowest mean was among those who had psychiatric disorder(s) in combination with the use of other drugs besides methadone. Multivariate analyses of variance (MANOVA) showed that co-occurring disorders had a significant effect on subjective and objective Qol ((Wilk's $\Lambda = .72$, $F(10,192) = 3.45$, $p < .001$). In the forced entry multiple regression with EQ-5D VAS as criterion variable, physical, psychiatric, and drug abuse severity index accounted

for 22.6% of the variation of the EQ-5D VAS ($R^2 = 0.226$, Adjusted $R^2 = 0.201$). Only severity of physical problems that had significant correlation with EQ-5D VAS, resulting in the following equation: $EQ-5D\ VAS = 80.5 + (-25.2 \times \text{physical severity index})$. For EQ-5D index, physical, psychiatric, and drug abuse severity index explained for 42.4% of the variation of the EQ-5D index ($R^2 = 0.424$, Adjusted $R^2 = 0.406$) and resulting in the following equation: $EQ-5D\ index = 1.006 + (-0.179 \times \text{physical severity index}) + (-0.609 \times \text{psychiatric severity index})$.

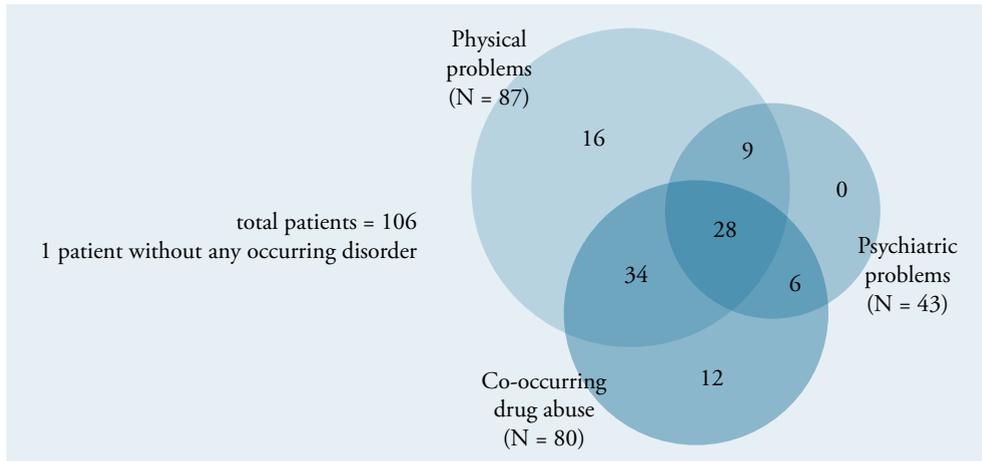


Figure 5.1. Current prevalence of physical, psychiatric, and drug abuse problem among methadone patients.

Co-occurring problems	N (%)	Mean	SD
EQ 5D visual analog scale (0-100)			
Physical	15 (14)	74	10
Drug abuse	12 (12)	84	13
Physical and psychiatric	9 (9)	75	17
Psychiatric and drug abuse	6 (6)	74	17
Drug abuse and physical	33 (32)	73	17
Physical, psychiatric and drug abuse	28 (27)	67	12
EQ 5D Index (0-1)			
Physical	16 (15)	90	12
Drug abuse	12 (11)	95	11
Physical and psychiatric	9 (9)	77	18
Psychiatric and drug abuse	6 (6)	60	39
Drug abuse and physical	34 (32)	89	14
Physical, psychiatric and drug abuse	28 (27)	73	27

Table 5.1. Physical problems among methadone clients.

Physical problems among methadone clients

The large majority of IDUs reported physical co-morbidity. Sixty four percent of the patients had been hospitalized, the large majority (88%) within the last year. The most common chronic physical problems among methadone patients (table 5.2) were hepatitis C (92%) and HIV-infection (77%) while Hepatitis C and HIV co-infection was documented in 74%. Among HIV-infected patients the median CD4 cell count was 222 (range: 4 to 1445); 48% had a CD4 cell count below 200 cells/ mm³. Chest X-ray examination were available for 38 patients and showed abnormalities in 21 patients (55%), including lesions suggesting tuberculosis in 11 patients (29%). The most frequent abnormal blood tests were elevated liver function tests and anemia. Abnormal laboratory test were more common among HIV-seropositive patients.

Physical problems	%
VDRL positive (N = 107)	1
HBsAg positive (N = 105)	6
HCV positive (N = 100)	92
HIV positive (N = 102)	77
CD4 (N = 85)	
Below 100	29
Between 100 and 200	19
Between 201 and 350	19
Hemoglobin below normal (N = 104)	27
Hematocrit below normal (N = 103)	29
Kreatinin above normal (N = 81)	3
Trombocytes normal (N = 103)	11
MCV below normal (N = 85)	26
MCH below normal (N = 75)	24
MCHC below normal (N = 75)	4
SGOT above normal (N = 105)	33
SGPT above normal (N = 109)	34
Gamma GT above normal (N = 77)	62
LDH above normal (N = 49)	35
Glucose above normal (N = 83)	0

Table 5.2. Psychiatric problems among methadone patients (N = 112).

Psychiatric problems among methadone clients

In the MINI assessment for psychiatric disorders, 57% of IDUs reported psychiatric pathology, and 42% suffered from psychiatric symptoms at the time of interview (table 5.3). The most diagnosed disorders were within anxiety disorder category (32%). However, forty-nine patients (44%) had experienced a psychotic disorder in their life time.

The occurrence of psychiatric disorders in HIV-positive and HIV-negative patients did not show any statistical differences.

Psychiatric problems	%
Current mood disorders	28
Life time mood disorders	30
Anxiety disorders	32
Current psychotic disorders	19
Life time psychotic disorders	44
Total current psychiatric disorders	42
Total life time psychiatric disorders	57

Table 5.3. Drug abuse among methadone patients.

* regular use (more than 3 times or 2 consecutive days a week)

** > 3 drinks in 1-2 hours, > 3 times or 2 consecutive days a week.

Note : Less than three participants used inhalant, hallucinogens or cocaine in the last 30 days.

Drug abuse among methadone clients

The large majority of patients used other substances beside methadone (figure 5.1), especially benzodiazepines, heroin, cannabis and alcohol (table 5.4). All of the patients had ever used heroin intravenously. Findings of urine drug tests were in line with the result from the interviews. Drug abuse among HIV-negative and HIV-positive patients was not statistically different.

Kind of drug*	Life time (%)	Last 30 days (%)
According to EuropASI questionnaire (N = 108)*		
Any use of alcohol	92	19
Alcohol, over threshold **	67	11
Heroin	100	27
Other opiates	31	6
Benzodiazepines	73	56
Amphetamine	69	3
Cannabis	75	22
Ectasy (MDMA)	64	5
More than one substance	81	58

Kind of drug* (follow-up)	Lifetime (%)	Last 30 days (%)
Drug urine test (N = 75)		
Opiate positive		3
Amphetamine positive		1
Cocaine positive		0
Methamphetamine positive		0
Cannabis positive		10
Benzodiazepine positive		61

Table 5.4. Drug abuse among methadone patients.

* regular use (more than 3 times or 2 consecutive days a week)

** > 3 drinks in 1-2 hours, > 3 times or 2 consecutive days a week.

Note : Less than three participants used inhalant, hallucinogens or cocaine in the last 30 days.

Characteristics of methadone maintenance patients in comparison with IDUs in community

As methadone clients may constitute a selected group of IDUs with more and more severe co-occurring disorders, community IDUs were examined for comparison. IDUs in the community were younger compared to IDUs at methadone clinic (28 ± 4 vs. 30 ± 4 years), had a shorter history of injecting drug abuse, lower education, worse occupation, and lower income (data not shown). However, similar to IDUs enrolled in MMT, IDUs in the community perceived that they had moderate problems and treatment needs related to physical, psychiatric, and drug abuse conditions.

The correlation between interviewer-rated severity for physical, psychiatric, and drug abuse problems and treatments need and problems and treatment need, as perceived by the IDUs themselves, was high ($r = 0.49 - 0.66$, $P < 0.01$). Furthermore, IDUs in the community who had accessed drug treatment at some point but not in the last 30 days, showed the most severe problems and the highest treatment needs, especially related to drug and psychiatric problems.

Discussion

This study showed a high prevalence of co-occurring physical, psychiatric, and drug abuse problems in IDUs. Among those problems, the psychiatric co-occurring disorders had the highest negative association with objective QoL, while only physical co-occurring disorders was associated with lower subjective QoL of MMT patients in West Java, Indonesia.

The result on objective QoL was in line with other studies which showed that there was a significant correlation between psychiatric problems and QoL^{14,25}. However, the comparison of the means of the objective QoL index, using the same instrument and the same treatment setting, showed that the QoL in methadone patients in Indonesia was higher^{14,39}. This can be due to the differences in ethnicity, socio-economic status⁴⁰, and age among study population. As well as psychiatric problems, physical problems had negative association with QoL.

In addition, physical problems were the most frequent co-occurring disorders. Parental route of administration and injecting risk behavior are usually conducted by heroin users so their general well being and health is at risk by infectious diseases such as HIV and hepatitis^{18,41-43}.

The prevalence of HCV and HIV among IDUs in the MMT program was very high, also compared to other countries^{9,17,41,44,45}. HIV will accelerate the progression of the liver disease, especially patients with low CD4 cell counts¹⁸. This is in line with the liver test abnormalities as were observed in our study. Another physical problem found in almost one third of MMT patients was tuberculosis. Tuberculosis reactivation in HIV-infected drug abusers with latent tuberculosis infection is 9% per year while a similar but lifelong risk is present in HIV-seronegative subjects with latent tuberculosis¹⁸. However, we may have underestimated the prevalence of tuberculosis in our study since symptoms like fever, cough and weight loss are uncommon among HIV patients and chest radiography, as the only method used for screening of tuberculosis in this study, generally would detect only 25%⁴⁶.

Furthermore, the findings about current and life time psychiatric problems were comparable with other studies but the prevalence of a psychotic disorder was higher^{14,44,47-50}. Based on the design of our study it is not possible to explain this difference. The treatment and the alleviation of the psychiatric problems improve the efficacy of MMT in the diminishment of drug use and retention in treatment¹⁸.

Moreover, similar to other studies, we found that drug abuse among methadone patients was common^{14,49,51}. A study showed that benzodiazepine abuse was common in methadone patients and was negatively influenced treatment outcomes¹⁶. Furthermore, in general, persisting co-occurring any substance use disorder has been associated with other negative outcome, including more frequent and longer periods of hospitalization, higher psychiatric disorder and relapse rate, higher non-compliance, and more extra pyramidal syndromes, unemployment, homelessness, violence, incarceration, suicide, and HIV infection⁵².

IDUs in the methadone clinic were compared with a group of IDUs recruited from the community in order to evaluate whether the results can be generalized. It proved that IDUs in the MMT program had similar problems and treatment needs as those from the community. Even though IDUs in MMT were older than those recruited from the West Java community, they were younger compared to patients in other methadone clinics in Australia, Canada, China, Iran, Israel, Netherland, Poland, Thailand, and USA; and also had the highest percentage of using opioid intravenously^{9,13,14,16,17}.

In addition, we found that IDU in MMT has a better socio-economic status compared to the community group which might indicate that the costs of treatment limit access to these services. Indeed, reports from other low income countries provides substantial evidence that bringing down the cost of treatment improves access and adherence, and in turn, the success of public health programs^{23,53-55}.

This study is limited because of an incomplete representativeness of the samples. In the methadone clinic, data were obtained from 60% of the population and not all of participating patients completed the whole interview and examination.

IDUs in the community are difficult to reach. By using RDS, we tried to minimize the risk of unrepresentative sample^{56,57}. Still, some IDUs who are not in the social networks with these participants can not be recruited through RDS⁵⁸.

Conclusion

In conclusion, this study from Indonesia showed that the co-morbidities are very common among IDUs and that the severity of psychiatric and physical problems is negatively associated with QoL. Providing one stop care in the methadone treatment is needed to increase the quality of life of the patients and increase the effectiveness of the treatment program.

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chapter 6

Psychiatric co-morbidity in injecting drugs users in Asia and Africa

Iskandar S, Kamal R, De Jong CAJ. Psychiatric comorbidity in injecting drug users in Asia and Africa. *Curr Opin Psychiatry*. 2012 May;25(3):213-8. Review.

Abstract

Purpose of review : The prevalence of psychiatric co-morbidity in injecting drug users (IDU) in the Western countries is high and is associated with lower quality of life and reduces the effectiveness of treatment programs. The aim of this study is to provide a review about psychiatric co-morbidity in IDU in Asia and Africa, where HIV prevalence is high and still increasing.

Recent findings : Studies focusing on psychiatric co-morbidity in Asia and Africa are scarce. The prevalence of psychiatric co-morbidity is comparable with the prevalence in western countries. Psychiatric disorders can occur before or during drug abuse and are also associated with substance abuse and physical co-morbidity and its treatments. Childhood trauma followed by post traumatic disorders is a significant risk factor for substance abuse. Psychiatric co-occurring disorders influence the adherence to the physical and drug use treatment. Evidence-based treatment for psychiatric co-morbidity in IDU is still limited.

Summary : A better understanding of the prevalence of psychiatric disorders in IDU and its impact to the overall treatments is growing. However, more studies focusing on the treatment for psychiatric co-morbidity in IDU in Asia and Africa are needed.

Keywords : psychiatric co-morbidity, injecting drug users , substance use disorders, HIV, Asia, Africa

Introduction

Injecting drug users (IDU) has created major public-health problems. It was estimated that, in 2007, 15.9 million people (range 11.0–21.2 million) were IDU¹. The transmission of blood borne viruses, in particular HIV, contributes substantially to the morbidity and mortality caused by illicit drug use². IDU also has been associated with some of the most severe HIV epidemics worldwide³.

The prevalence of HIV in IDU in many countries is stable or decreasing. However, in most of the low and middle income countries in Asia and Africa, the prevalence still increases significantly⁴. Among 3.9 million (range 3.5 - 5.6 million) IDU live in south, east and south-east Asia², HIV prevalence ranges from 10 - 43%². In Africa, the estimation number of IDU is still limited (500,000 to 3 million)⁵, however a large increase is reported and the prevalence of HIV in IDU is high (33-50%)^{4, 6}.

IDU with medical, psychiatric, and substance use disorder co-morbidities are likely to engage in high-risk behaviors, and when untreated, continue to fuel the HIV epidemic³. Furthermore, these co-occurring disorders complicate care. Lack of proper HIV diagnosis and treatment influence the effect of the overall treatment. The HIV treatment itself causes serious psychiatric side effects^{3, 7, 8}.

Little is known about psychiatric problems in IDU in Asia and Africa^{2, 4, 9-11}. Therefore, the focus of this present article involves the prevalence of psychiatric disorders and the occurrence of psychiatric co-morbidity in association with substance use and blood borne infections. In the following chapters, existing data from western countries are compared with those from Asia and Africa.

Prevalence of psychiatric co-morbidity in IDU

IDU with psychiatric co-morbidity are likely to engage in high-risk behavior³. Psychiatric co-morbidity in IDU is associated with poorer quality of life^{12, 13}. The results of two recent studies in Asia were in line with those findings. A study from China showed that IDU experiencing negative affect may develop maladaptive thoughts, which compromise their motivation to take care of themselves and to avoid the negative consequences of risk behaviors. In the context of high HIV and other blood borne diseases, these risk behaviors lead to the transmission of the diseases to other IDU and to the general population through injecting and sexual risk behavior¹⁴. In addition, regarding quality of life, a study from Taiwan showed that IDU with depression had poorer quality of life compared to those without depression¹⁵.

Even though giving attention to psychiatric co-morbidity is very important, most of the articles in the last two years were focusing on physical co-morbidity, risk behaviors, and policy. Studies focusing on psychiatric disorders in IDU show that the prevalence is high^{10, 14-22} and comparable with the findings in western countries^{12, 23-25}.

The percentage of dual diagnosis (according to DSM IV and ICD 10) in IDU is about 40%^{10, 20}. However, psychological distress, such as hating oneself very much or feeling very depressed, is experienced by more IDU (90%)¹⁴. The prevalence of suicidal ideation and suicidal attempts ranges between 50% to 93% and 43% to 87%, respectively^{16, 22}. Poor

sleep quality is experienced by 66-96%^{14, 19}. The prevalence of anxiety ranges between 4 to 53% and for depression between 18% to 72%^{10, 15, 18}. Other frequent psychiatric co-morbidities are current pathological gambling (21%)²¹; psychotic disorders (12%); and adjustment disorders (9%)¹⁰. Different instruments and population sample of IDU influence the prevalence of psychiatric co-morbidity.

All studies are cross-sectional which limited insight in the course of the psychiatric problems. Psychiatric problems can happen before or after drug addiction. Those who have progression from drug addiction to a psychiatric disorder were more frequently affected by mood disorders^{23, 26}. Conversely, primarily mentally ill dual diagnosed patients were more frequently diagnosed as psychotic or as affected by anxiety disorders. Certainly, this chronological difference had consequences in the approach of the treatment. More research in Asia and Africa with bigger sample size and better methodology quality is needed.

Psychiatric risk factors for becoming non-injecting/ injecting drug users

Several psychiatric factors may increase the vulnerability to become a drug user. Frequently found are personality traits, such as negative temperament and disinhibition²⁷; impulsivity, sensation-seeking, novelty seeking, reward-sensitivity²⁸; antisocial personality²⁹; and childhood trauma, including physical, sexual, and emotional abuse/neglect³⁰. These psychiatric factors influence treatment outcome and are rarely addressed in treatment²⁸.

Studies in Asia and Africa found similar results. A study from China showed that 80% of IDU reported at least one type of childhood trauma and greater physical and emotional abuse in childhood was associated with greater psychological distress later in life³¹. A study from Israel reported that 54% of the patients who experienced childhood sexual abuse developed a post traumatic stress disorder (PTSD). PTSD was associated with more frequent use of heroin³². In Africa, childhood sexual abuse among female IDU in Tanzania ranges from 21% to 46%. Seventeen percent of them used heroine as self medication for PTSD and depression³³. A study among street children in Egypt showed that 93% of them faced harassment or abuse and 62 % of them used drugs³⁴.

Psychoactive substances and psychiatric co-morbidities in IDU

A review show that 40-90% of individuals with a lifetime substance use disorder also have a lifetime history of at least one other mental disorder and vice versa (35). A study in South Africa showed that 51% of psychiatric patients had substance use disorders (36).

The abuse of several drugs (poly-drug use) is a common pattern among IDU and increases the vulnerability to suffer from psychiatric disorders^{23, 37}. There are many potential explanations for the association that include: substances induce depressive symptoms; mood disturbances follow substance withdrawal; substance use promotes confrontation with stressors; substances are used to cope with depressed mood³⁸. Furthermore, poly-drug use leads also to more frequent and longer periods of hospitalization, higher relapse rate, higher non-compliance, higher risk behavior, more extra pyramidal syndromes, unemployment, homelessness, violence, incarceration, suicide, and HIV infection^{39, 40}.

The most injected substance in Asian countries is heroin although 70 to 80% of IDU have a history of poly-drug use. The most common drugs used in lifetime are alcohol, tobacco, opiates, cannabis, and depressants, and the most common combination of co-use is heroin with another depressant⁴¹⁻⁴⁶.

In Africa, heroin and crack/ cocaine are the most reported injected drugs⁵ and cannabis and alcohol are the most common drugs used in combination with injected drugs⁴⁷. Additionally, in the last few years, the use of amphetamine type stimulants (ATS) is increasing in both continents^{4, 48-50}. The use of ATS and heroin is possibly associated with the increase of injecting and sexual risk behavior by IDU⁴⁸⁻⁵¹.

Effect of physical co-morbidity and its treatment to the occurrence of psychiatric co-morbidity in IDU

Studies demonstrate that those with Hepatitis C Virus (HCV) infection have a higher possibility to experience headache, fatigue, depression, anxiety and neurocognitive deficits in attention, learning processes and memory⁵² while anti-HCV treatments can cause neuro-psychiatric adverse effect, such as interferon alpha which can cause depression⁵³.

HIV infection is a risk factor for a psychiatric disorder via the virus' effect on the central nervous system⁵⁴, psychosocial factors⁵⁵, and/or antiretroviral-related adverse effects such as cognitive impairment, depression, anxiety, and psychosis⁴³. HIV-associated neurocognitive disorders (HAND) are associated with persistent systemic and CNS inflammation, and enhanced neuronal injury due to stimulant abuse (cocaine and methamphetamine), aging, and antiretroviral drugs. HAND prevalence may be higher in areas of Africa where different HIV subtypes predominate⁵⁶.

So far, we found only two studies in Asia on this topic. A study in Malaysia showed that HIV positive IDU was significantly associated with non-substance induced psychiatric disorders¹⁰. A study in Thailand showed that patients in antiretroviral treatment with undetectable plasma HIV RNA showed low percentage of depression and anxiety⁵⁷. More research in Asia and Africa related to this topic is needed because the genetic of the virus and the people, and drug use are different.

Effect of psychiatric and injecting drug co-morbidities to physical co-morbidity and its treatment

Substance dependence is a relapsing chronic condition whereby multiple drugs are often used which increases complex drug interactions. If a parental route of administration is applied, general well being and health is at risk by infectious blood borne diseases such as HIV and hepatitis^{3, 58-60}. In addition, the use of psychoactive substances influences the immune system and increases the vulnerability to have infectious diseases in IDU. For example, heroin can decrease the natural killer cell activity, phagocytosis, antibody-dependent cellular cytotoxicity and causes alterations in cytokine and chemokine production⁴³. Methamphetamine and cocaine enhances HIV replication and production of neurotoxic factors, and increases defects in the blood brain barrier⁵⁶.

IDU with psychiatric disorders use more substances, are hospitalized more frequently and for longer duration, have higher suicidal rate and higher impairment on medical status and are socially isolated¹⁶. Furthermore, psychiatric co-morbidity is associated with HIV disease progression⁶¹. Treatment for addictive and psychiatric disorders leads to an increase of adherence to medical regimes, thus reducing the risk of the early emergence of treatment-resistant AIDS and tuberculosis^{3, 62, 63}.

However, high stigmatization to those who had psychiatric disorders, especially to those who also used drug, leads to lower rate of help-seeking and serves as a major barrier to treatment⁶⁴. Many physicians are still reluctant to treat IDU because of fears of non-adherence and consequent development of antiretroviral resistance, although so far research proved that this assumption is not right⁶⁵. A study from Indonesia showed that IDU with HIV tend to have more advanced disease than non addicted patients, but respond similarly to antiretroviral therapy⁶⁶. A study from India shows that stigmatization to IDU leads to more drug use and relapse, reduce treatment seeking, and increase risk behaviors⁶⁷. Reducing stigmatization and taking into consideration the psychiatric and drug use co-morbidities are very important in providing optimal physical treatment for IDU.

Psychiatric treatment for IDU

One of the reasons for the limited use of psychiatric treatment is that drug users with psychiatric symptoms rarely want to be referred to specialized facilities for psychiatric treatment⁶⁸. Interventions to increase referral and uptake from/ to mental treatment are needed^{69, 70}. One of the approaches is to provide psychiatric treatment in an addiction clinic program⁷¹.

One of the most effective addiction treatments for opioid IDU is methadone maintenance treatment (MMT). A study from China showed that in MMT which provides physical and psychological therapy, mental health improved from treatment initiation to day 90. It is suggested that MMT enables outpatients to feel less stressed due to being free from the financial burdens of drug addiction. They do not need to worry about being arrested or having an overdose. After treatment initiation, they slowly become independent from heroin addiction, and their self esteem returns as a result. The support from the MMT doctors and family members for the patients is helpful in the improvement of the mental health of the patients⁷².

Despite the effectiveness of MMT, the number of MMT in most of Asian and African countries is still limited⁷³. The awareness among IDU about substance abuse treatment is low⁷⁴. Furthermore, the offer of comprehensive treatment in general is still fragmented. The lack of specialized knowledge amongst professionals working within this field, as well as equipment and medication, and stigmatization of drug users contributes to the delay of providing appropriate interventions⁷⁵.

Conclusion

Psychiatric problems and disorders among IDU are very common and have direct and indirect consequences to the effectiveness of the physical treatment programs.

Assessment and treatment should be conducted carefully because psychiatric problems can be present independently or as a result of HIV, HCV, substance abuse, other co-morbidity and their treatments. More research in this area, especially regarding treatment intervention options, are really needed in Asia and Africa where the physical problems are more complex and resources are limited.

Conflicts of Interest

There are no conflicts of interest

Key points

- Data addressing psychiatric disorders and psychiatric interventions in IDU is limited
- The prevalence of psychiatric co-morbidity in Asia and Africa is comparable with the prevalence in western countries
- Psychiatric co-morbidity reduces quality of life, increase HIV risk behavior, associates with more drug use, and influence the adherence to the treatment programs
- HIV infection and its treatment increase the vulnerability for developing psychiatric disorders via its direct effect in the central nervous system and psychological stress
- The lacks of specialized knowledge amongst professionals working with IDU, as well as stigmatization of IDU, limits the quality level of psychiatric and medical interventions to IDU

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chapter 7

Family involvement in HIV and tuberculosis care in Indonesia : an explorative study

In review

Abstract

Involvement from the family is associated with a better outcome in HIV patients. This cross-sectional survey was conducted to explore factors that can influence family involvement. One hundred twenty three family members were recruited through purposive sampling: 36, 43, and 44 family members of HIV patients with IDU history, HIV patients without IDU history, and tuberculosis patients, respectively. Compared with family of tuberculosis patients, family of HIV patients showed higher satisfaction about the care given by health care providers especially about getting information. Family of HIV patients with IDU history were more worried about their sick relatives than two other groups. Hope for the future of their sick relatives was high and comparable in these three groups. Drug use and problems that have impact on the family of HIV patients with IDU history should be addressed by health care providers to support family, and heighten their involvement in the treatment.

Key words : Family involvement; HIV; injecting drug use; Tuberculosis; substance related disorder

Introduction

HIV patients have many medical problems (Altice, Kamarulzaman, Soriano, Schechter, & Friedland, 2010). The problems increase by stigma and discrimination.

Stigma and discrimination can lead to a more stressful life that can be worse than having the disease itself (Ahsan Ullah, 2011). Psychological distress can contribute to HIV progression (Ironson & Hayward, 2008). High levels of psychological distress are associated with a decrease in CD4 count, an increase in viral load, and a faster progression to AIDS (Ironson & Hayward, 2008).

In recent year, the concept of family has been broadened to include people who are important to the patients. It can include spouses, boyfriends or girlfriends, same-sex partners, parents, siblings, children, extended family members, friends, co-workers, employers, members of the clergy, and others (SAMHSA, 2006). Family involvement is a multidimensional construct that entails visiting, socio-emotional care, advocacy, financial assistance, support in the disclosure process, daily routine activities, medical assistance, psychological support, and the provision of personal care (Li et al., 2006). Family involvement also addresses the need to provide the families of those with long-term diseases with supportive interventions (Maglione, 2005).

Involvement from the family are associated with a better physical and psychological adjustment in HIV patients, such as more positive affect, lower negative affect, reduced risk, and enhancement of health-related behaviors, better medical service utilization, better illness management strategies, including higher rates of medication adherence in HIV patients (Gordillo et al., 2009). The importance of the family involvement for HIV treatment has been studied quite extensively; however attention to the family of HIV patients is still limited (Rotheram-Borus, Flannery, Rice, & Lester, 2005). Family can experience stress because of the suffering and stress of their family members with HIV (Howe, Levy, & Caplan, 2004). Increased levels of stress in one or more family members may result in decreased ability of family members to offer support to one another and increased distress for individuals in the family. HIV patients from families with high stress levels experience more psychological distress than those from families with lower average stress levels (Brincks, Feaster, & Mitrani, 2010). In conclusion, family members of HIV patients can be both a source of stress as well as support (Owens, 2003).

In Indonesia HIV is prevalent for two decades (Pisani, Dadun, Suchaya, Kamil, & Jazan, 2003) and the HIV epidemic is among the fastest growing in Asia (NAC, 2009). The epidemic, except for Papua, is mainly driven by injecting drug use (IDU) (NAC, 2009). Substance abuse problems make the overall problems more complex and lead to more stigmatization to HIV patients (Achmad et al., 2009). Like other Asian countries, Indonesia is a collectivist society. People are integrated from birth onward into strong, cohesive in-groups, often extended families (Hofstede & McCrae, 2004). Therefore, problems in HIV patients in collectivist societies may affect more other family members compared to individualist societies.

Factors in family involvement that influence the treatment of sick relatives include satisfaction in the care given by health care providers, perceptions of the problems, and the believe that problems can be changed (Mayberry & Heflinger, 2011). Therefore, the aims of this present study is to explore: (1) the satisfaction of the family on services received from the health care providers, (2) the problems that family perceive in helping sick relatives, and (3) their hope concerning the future of their sick relatives. As a comparison for the HIV group,

we studied the family of patients with tuberculosis (TBC). We opted for TBC because this is also a chronic infectious disease, common in Indonesia, and known in the general community for longer time. It can be cured, and it is less stigmatized (WHO-SEARO, 2009).

Methods

Participants

Respondents in this study were family of HIV or tuberculosis (TBC) outpatients who were in treatment in clinics of the Hasan Sadikin Hospital, the Bandung-based top referral hospital of West-Java Province, Indonesia. The HIV group was classified into: with and without injecting drug use (IDU) history group. The inclusion criteria were: family members or significant others with the most close relationship with the patients, the most important person for patients, or the most involved person during the treatment for minimal one month, and not suffering from TBC or HIV. They were chosen by purposive sampling. All respondents then provided informed consent. The study was approved by the regional medical-ethical committee (LB.02.01/C02.2/12857/XI/2010).

Assessment

Interviewing of the family was done by trained interviewers who assured all participants that their anonymity would be maintained. Besides the general information about the sick relatives and socio-demographic characteristic of the respondents, three validated questionnaires were used: the Family Contact Information Support (Family CIS), the Family Member Impact (FMI), and the Hopefulness-hopelessness (HOPE). The WHO translation procedures were used (WHO, 2003) for the translation into Bahasa Indonesia of the three questionnaires.

The Family Contact Information and Support (Family CIS) (DeJong, Noppen, & DeJong-Verhagen, 2009) was used for measuring satisfaction in services received from the health care providers. This scale was designed in the setting of psychiatric outpatients treated in a General Mental Health Care Institution in the Netherlands. The instrument consists of 22 items and is divided into three sub-scales which measure perceived satisfaction in the relationships and cooperation with health care providers (6 items); in receiving information from health care providers (12 items); and in getting emotional support (4 items). Each question with the answer “yes” gets score 1 and 0 for “no”. All items were summed to make the final score. Each subtotal and total score is divided with the maximum score in each subscale or total scale. So, the subtotal and total score lie between 0 and 1. Higher scores indicate better services given by health care providers. The Family CIS shows a good internal consistency with Cronbach’s alpha for contact .81, for information .84, and for support .76 (DeJong et al., 2009).

The Family Member Impact (FMI) (Orford, Templeton, Velleman, & Copello, 2005) is a 16-item questionnaire (table 7.3) and assesses the extent and the type of harmful impact that the family member perceives of their relatives’ disease in the last three months. Originally, this scale was designed in the drinking or drug-taking setting. Response options for each item are: not at all, once or twice, sometimes, and often (0, 1, 2, and 3). Principal components analysis produced two interpretable factors: active disturbance (items 1, 2, 5, 6, 7, 10) and worrying behavior (items 3, 4, 8, 9, 11, 12, 13, 14, 15, 16).

The internal consistency reliability for the total scale, worrying behavior and active disturbances parts are fairly good (.77 for the total score, .74 for active disturbances, and .69 for worrying behavior) (Orford et al., 2005).

The Hopefulness–hopelessness (HOPE) scale (Orford et al., 2005) is a 10-item scale questionnaire which is designed to assess how hopeful family currently feels about the future of their sick relative. Several statements focused on the family’s own feelings (e.g. I feel more positive about things; things are beginning to pick up), the other more focused on perceptions of the relative (e.g. I worry that s/he will use till the end; I’m fearful about how s/he will get on). The maximum score per item is 5 (5–1 for positive items and 1–5 for negative items). A higher score indicates the higher hope. Earlier research in drug addiction settings has shown that the HOPE has good internal consistency (.86) (Orford et al., 2005).

Data analysis and statistics

Descriptive data are presented in terms of percentage, mean, and standard deviation. The differences in the characteristics between groups (HIV with IDU history, HIV without IDU history and TBC) are analyzed using the Chi–Square for dichotomous data and one-way ANOVA for continuous data. In case of significant differences in characteristics, analysis of covariance (ANCOVA) will be used to adjust for the differences in Family CIS, FMI, and HOPE score among the three groups. Statistical significance (two-tailed) is indicated when the p value is 0.05 or less. Analyses were performed with SPSS, version 15.

Results

A total of 123 respondents participated: 36 family members from the HIV with IDU history, 43 family members from the HIV without an IDU history, and 44 family members from the TBC group. The mean age of the TBC patients was significantly older compared to HIV without IDU history patients (table 7.1 A). Most of the patients with HIV and IDU history were male while the ratio of male and female in the other groups was equivalent. The duration of suffering from the disease was significantly longer in HIV patients, especially those with IDU history.

Characteristics	total N = 123	HIV IDU N = 36	HIV-Non IDU N = 43	TBC N = 44	P
Patient characteristics reported by family					
Age, M (SD)	32 (10)	30 (4)	29 (5)	35 (15)	<0.01
Gender, female, N (%)	55 (45)	9 (25)	21 (49)	25 (57)	0.1
Disease duration, N (%)					<0.01
< 1 year	44 (36)	1 (3)	7 (16)	36 (82)	
1-2 years	31 (25)	7 (19)	19 (44)	5 (11)	
2-3 years	14 (11)	1 (3)	10 (23)	3 (7)	
4-5 years	10 (8)	5 (14)	5 (12)	0 (0)	
> 5 years	24 (20)	22 (61)	2 (5)	0 (0)	

Family member characteristics					
Types of relationships with people live with HIV, N (%)					< 0.01
Parents	34 (28)	13 (36)	6 (14)	15 (34)	
Son or daughter	6 (5)	0 (0)	1 (2)	5 (12)	
Sibling	15 (12)	3 (8)	4 (9)	8 (18)	
Other family member	6 (5)	4 (12)	1 (2)	1 (2)	
Spouse or sexual partner	37 (30)	13 (36)	9 (21)	15 (34)	
Close friend	21 (17)	3 (8)	18 (43)	0 (0)	
Others	4 (3)	0 (0)	4 (9)	0 (0)	
Age, M (SD)	38 (12)	39 (13)	35 (12)	39 (11)	0.28
Gender, female, N (%)	68 (55)	23 (64)	11 (26)	34 (77)	< 0.01
Education, N (%)					< 0.01
Junior High School or lower	39 (22)	7 (19)	11 (26)	21 (48)	
High School	56 (46)	16 (45)	19 (44)	21 (48)	
Diploma or higher	28 (22)	13 (36)	13 (30)	2 (4)	
Drug use, N (%)					
Alcohol	28 (23)	11 (31)	15 (35)	2 (5)	< 0.01
Other substances	10 (8)	9 (25)	0 (0)	1 (2)	< 0.01
Alcohol and other substances	6 (5)	6 (17)	0 (0)	0 (0)	< 0.01

Table 7.1. The comparison of the socio-demographic characteristics of the patients and the family members of the HIV with IDU history, HIV without IDU history, and TBC patients.

Among HIV patients with IDU history, 14 of 36 patients were in methadone treatment. Most of the methadone patients (12/14) have been in the treatment for more than 1 year. All HIV patients have been treated with anti-retroviral treatment (ART). There was no significant difference in the length of ART between HIV patients with and without IDU history. Twenty-eight out of 79 patients have been treated with ART for more than 2 years, and only 12 of them in ART for less than 6 months. Most of the TBC patients (34/44) have been in the TBC treatment for less than 6 months and only 4 patients have been treated for more than 1 year.

The most frequent types of relationships with family members were spouses or sexual partners (30%), parents (28%), or close friends (17%) (table 7.1B). The mean age of the family members was 38 years (SD 12). In the HIV without IDU history group, most of the family members were close friends whereas in HIV with IDU history and TBC patients, most of the family members were spouses or sexual partners and parents. Most of the family in TBC group (34/44) and in HIV with IDU history group (23/36) were female, whereas on the contrary in HIV without IDU history group (11/43).

The average education level was senior high school. In the HIV group the education was significantly higher. More alcohol was used by family of HIV patients (26/79) than of TBC patients (2/44). None of family members of HIV patients without IDU history and only one person in family of TBC patients used other psychoactive substances. Nine out of 36 family members of HIV patients with IDU history used other psychoactive substances and 6 family members used both alcohol and other substances.

Table 7.2 showed the comparison of the satisfaction of the family on the care received from the health care providers. Family of HIV patients perceived better information about confidentiality and privacy during treatment, symptoms of the disease when it relapses, how to handle critical situation/ relapse, information about course/ training/ education, support group/ non-government organizations (NGOs), and contact person in support group/ NGOs. The further analysis on the subscales showed that satisfaction in care given by health care providers was higher among family of HIV patients with and without IDU history concerning the information part. After controlling for the significant characteristic, univariate differences among groups (patient sex, patient age, type of relationship, sex, age and education of the family members), the contrasts between TBC and HIV groups was still significant. TBC patients group had significantly lower total score for Family CIS compared to HIV-IDU group, $t(114) = 2.18, p = 0.03$, and HIV-Non IDU group, $t(114) = 2.10, p = 0.04$.

Family Contact Information and Support Scale	total N = 123	HIV IDU N = 36	HIV-Non IDU N = 43	TBC N = 44	P
Total score (0-1), M (SD)	0.79(0.19)	0.82(0.18)	0.85(0.17)	0.70(0.19)	<0.01
Contact subscale					
Contact total score (0-1),M (SD)	0.82(0.19)	0.82(0.18)	0.86(0.17)	0.78(0.21)	0.14
HCP actively involve overall treatment	117 (95)	34 (94)	40 (93)	43 (98)	0.58
HCP actively involve treatment plan	116 (94)	34 (94)	41 (95)	41 (93)	0.91
Opportunity to share pers. experience	84 (68)	25 (69)	34 (79)	25 (57)	0.8
HCP ever consider pers. experience of family treatment	72 (59)	18 (50)	29 (67)	25 (57)	0.28
Easy to contact HCP	100 (81)	31 (86)	38 (88)	31 (71)	0.7
HCP gives respect to family	114 (93)	35 (97)	39 (91)	40 (91)	0.46
Information subscale					
Information total score (0-1), M (SD)	0.76(0.24)	0.81(0.22)	0.85(0.20)	0.63(0.23)	<0.01
Confidentiality and privacy	91 (74)	30 (83)	37 (86)	24 (55)	<0.01
Regulation in the treatment setting	106 (86)	30 (83)	40 (93)	36 (82)	0.27
Explanation about the disease	117 (95)	33 (92)	40 (93)	44 (100)	167
Treatment plan	107 (87)	29 (81)	41 (95)	37 (84)	0.12
The role of family in the treatment	105 (85)	31 (86)	37 (86)	37 (84)	0.96
Drugs and their side effects	108 (88)	33 (92)	40 (93)	35 (80)	0.11
Possible daily activities for the patient	100 (81)	30 (83)	37 (86)	33 (75)	0.39

Symptoms when the disease relapse	97 (79)	31 (89)	37 (86)	28 (64)	<0.01
Handle the critical situation/relapse	80 (65)	30 (83)	32 (74)	18 (41)	<0.01
Course/training/education	71 (58)	23 (64)	29 (67)	19 (43)	0.5
Support groups/NGOs	72 (59)	24 (67)	35 (81)	13 (30)	<0.01
Contact person support groups/NGOs	68 (55)	24 (67)	36 (84)	8 (18)	<0.01
Support subscale					
Support total score (0-1), M (SD)	0.83(0.26)	0.84(0.25)	0.84(0.26)	0.80(0.27)	0.74
Support and handle family emotional problem	100 (81)	32 (89)	36 (84)	32 (73)	0.16
Being listened by HCP	113 (92)	34 (94)	40 (93)	39 (89)	0.60
Guidance in learning proces of helping the sick relative	99 (81)	28 (78)	36 (84)	35 (80)	0.79
Guidance in planning daily activity of the sick relative	94 (76)	27 (75)	32 (74)	35 (80)	0.83

Table 7.2. The comparison of the satisfaction received from the health care providers (Family Contact Information and Support Scale) by the family of HIV patients with IDU history, HIV patients without IDU history, and TBC patients. All data are presented in number (percentage) for the yes answer in each question unless stated otherwise. HCP : health care providers; NGOs : non government organizations

There were several items open for improvement in all groups. Less than 60% of family members had had contact, information, and support related with using the personal experience of family in the treatment, information regarding courses/ training/ education about the disease, NGOs or support groups, and contact persons in the health care institutions/ NGOs.

Problems faced by family were highest in the HIV with IDU history group, especially for the worrying behavior subscale (table 7.3). Specific problems were: the sick relative upsets family occasions; smoking/ alcohol/ drug use by the sick relatives bothers family's social life; sick relative was late or unreliable; sick relative neglects his/her appearance or self-care; and sick relative's mental state is becoming affected by the drinking/drug use/smoking. The differences for FMI total score between the three groups after controlling for patient sex, patient age, type of relationship, sex, age and education of family members were also significant, $F(2,114) = 4.41, p = 0.01$. In general, family were worried about the very changeable moods, the sick relative's physical health has been affected by his/her bad habit (drinking/drug use/ smoking), and sick relative's mental state is becoming affected by his/her bad habit (drinking/drug use/smoking).

The hope about the future of their sick relative's in all groups was high and there was no significant difference among the three groups (table 7.4). Family believed that they will start to a new future; something good will come out of this for their sick relative; things are beginning to pick up; and feel more positive about things. However, they felt doubtful whether their sick relative will get on and whether their relative will smoke/ drink alcohol/ use drug till the end.

Family Member Impact Scale	total N = 123	HIV IDU N = 36	HIV-Non IDU N = 43	TBC N = 44	P
	M (SD)	M (SD)	M (SD)	M (SD)	
Total score (0-48)	14 (7)	17 (8) ^a	13 (6) ^a	12 (7)	< 0.01
Active Disturbance (0-3)					
Active Disturbance total score (0-18)	4 (3)	5 (3)	4 (2)	4(3)	0.16
Very changeable moods	1.7 (0.9)	1.8 (0.9)	1.7 (0.9)	1.6 (1.0)	0.79
Communicate badly	0.9 (1.0)	1.2 (1.1)	0.8 (0.9)	0.7 (1.0)	0.8
Pick quarrels	0.5 (0.9)	0.8 (1.1)	0.4 (0.8)	0.4 (0.9)	0.17
Threaten	0.1 (0.4)	0.0 (0.0)	0.2 (0.6)	0.1 (0.4)	0.24
People outside the family have to be involved	0.7 (1.10)	0.7 (1.1)	0.5 (1.0)	1.0 (1.1)	0.15
Upset family occasions	0.2 (0.6)	0.4 (0.8) ^a	0.3 (0.6)	0.0 (0.2) ^a	0.1
Worrying Behavior (0-3)					
Worrying Behavior total score (0-30)	10 (6)	13 (6) ^a	10 (5)	8 (6) ^a	< 0.01
Steal/borrow money, not pay it back	0.2 (0.6)	0.2 (0.6)	0.2 (0.6)	0.1 (0.5)	0.68
Affect family's finances	1.3 (1.2)	1.4 (1.1)	0.9 (1.0) ^a	1.6 (1.3) ^a	0.2
Come and go at irregular/awkward times	0.5 (0.8)	0.5 (0.7)	0.7 (1.0)	0.3 (0.7)	0.7
Drinking/drug use/smoking bother family's social life	0.7 (1.0)	1.4 (1.3) ^a	0.5 (0.8) ^a	0.2 (0.7) ^a	< 0.01
Fail to join family activities	0.9 (0.9)	1.2 (1.1)	0.8 (0.8)	0.8 (0.9)	0.8
Later or unreliable	0.8 (0.9)	1.2 (1.0) ^a	0.8 (0.9)	0.5 (0.8) ^a	< 0.01
Health condition affects work/study	1.4 (1.2)	1.4 (1.2)	1.3 (1.2)	1.5 (1.3)	0.75
Drinking/drug use/smoking affects physical health	1.7 (1.2)	2.0 (1.0)	1.7 (1.2)	1.4 (1.4)	0.12
Neglect his/her appearance or self-care	1.1 (1.1)	1.5 (1.1) ^a	1.2 (1.1)	0.8 (1.2) ^a	0.4
Mental state is affected by drinking/ drug use/smoking	1.5 (1.2)	1.9 (1.0) ^a	1.4 (1.2)	1.1 (1.3) ^a	0.1

Table 7.3. The comparison of the problems faced by family (Family Member Impact Scale) of HIV patients with IDU history, HIV patients without IDU history, and TBC patients.

^a the comparison groups with significant difference in post-hoc analysis.

Hopefulness-hopelessness HOPE scale	total N = 123	HIV IDU N = 36	HIV-Non IDU N = 43	TBC N = 44	P
	M (SD)	M (SD)	M (SD)	M (SD)	
Total score (0-50)	38 (4)	38 (5)	38 (4)	38 (4)	0.94
Positive items (1-5)					
Start to anticipate a new future	4.4 (0.6)	4.3 (0.6)	4.4 (0.5)	4.4 (0.6)	0.43
Something good will come out of this	4.5 (0.5)	4.6 (0.5)	4.5 (0.5)	4.5 (0.5)	0.53
Things are beginning to pick up	4.4 (0.5)	4.5 (0.5)	4.3 (0.5)	4.5 (0.50)	0.13
Start to get back the person I know	3.9 (0.9)	3.9 (1.0)	3.9 (0.9)	3.9 (0.9)	0.98
Feel more positive about things	4.4 (0.7)	4.4 (0.7)	4.4 (0.7)	4.4 (0.6)	0.99
Negative items (1-5)					
Fearful about how s/he will get on	2.6 (1.1)	2.6 (1.0)	2.5 (1.1)	2.6 (1.2)	0.98
S/he is not looking at things seriously	3.5 (1.1)	3.5 (1.0)	3.3 (1.1)	3.6 (1.1)	0.29
Pessimistic about the immediate future	3.6 (0.9)	3.6 (0.9)	3.8 (0.8)	3.5 (1.1)	0.33
S/he is stuck, never going to be any change	3.5 (1.0)	3.5 (1.0)	3.6 (0.9)	3.3 (1.1)	0.61
S/he will use drug/drinking smoking till the end	3.0 (1.3)	3.2 (1.3)	3.0 (1.2)	3.0 (1.3)	0.79

Table 7.4. The comparison of the hope of the family of HIV patients with IDU history, HIV patients without IDU history, and TBC patients (HOPE Scale) concerning their sick relatives

Discussion

This explorative study from Indonesia shows that family from HIV patients have better satisfaction on the services received from the health care providers, especially in getting information than family of TBC patients. They perceived more problems compared to the family of TBC patients. The problems were related to the harmful impact of smoking/ alcohol/ substance used by their sick relatives to themselves and to the family. There were no differences in the hope about the future of their sick relatives in the HIV with and without IDU history and TBC groups.

The average age of the HIV patients in this study was young and all received ART. Most of HIV patients with an IDU history have been treated for their addiction problems. ART, addiction treatment, and the combination of both treatments will improve patient well being (Altice et al., 2010). Some studies showed that younger HIV patients less adhered to the ART (Protopopescu et al., 2009). Perhaps more family involvement is needed to increase the adherence to ART (Ibrahim, Haroen, & Pinxten, 2011; Protopopescu et al., 2009).

Most of the family members were young and they have a blood relation with the patients. These characteristics were similar to the characteristics of the social networks in other studies in Africa and USA (Green, Atuyambe, Ssali, Ryan, & Wagner, 2011; Owens, 2003).

The use of alcohol and psychoactive substances in the family members, especially in HIV with IDU history group, pointed at the need to provide addiction counseling and treatment also for family members. External stressors, such as peer pressure, drug related cues, conditioning, setting for drug self-exposure, and concomitant ongoing psychiatric disorders, such as depression or anxiety are important environmental factors contributing to the development and relapse of addiction (McLellan, Lewis, O'Brien, & Kleber, 2000).

Positive interactions with health care provider are associated with better adherence to ART (Johnson et al., 2006). Family of HIV patients in our study perceived better satisfaction in the care given by health care providers compared to family of TBC patients, especially in getting information about confidentiality, symptoms and treatment of the disease, and support from NGOs. In the HIV testing guideline, the patients are encouraged to disclose their HIV status to their spouses, current sex partners, and previous sex partners and recommend that these partners be tested for HIV infection (Branson et al., 2006). Information about the disease and confidentiality, and informed consent were part of the routine HIV testing procedure (Branson et al., 2006). In addition, most of HIV patients in Indonesia come from populations at higher risk and there are several NGOs that provide out-reach, information, and support for the patients and also their family in these key populations. These NGOs also work together with health care providers (Altice et al., 2010).

Our findings show that in general, the satisfaction in the care given by health care providers was high compared to a study using the same questionnaires in addiction patients in the Netherlands (DeJong et al., 2009). Some factors can still be improved, such as involving family in the treatment planning of the sick relative and more information about accessible social supports and education. Management of chronic disease like HIV requires an active role in decision making, problem solving, and implementation of a personalized treatment plan to achieve better health outcomes (Swendeman, Ingram, & Rotheram-Borus, 2009). Furthermore, shared decision making will increase family involvement in the treatment (Mayberry & Heflinger, 2011).

The problems faced by the family in this study were lower compared to another study in an addiction population in England (Orford et al., 2005). Family of HIV patients with IDU history had more problems compared to the other two groups. They were more worried about the use of tobacco or alcohol or drugs of their sick relatives that bother their social life, that were late or unreliable, they neglect his/her self care, and that the mental state of them were affected by drinking/ drug use/smoking. As a response to those worries, health care providers can provide the integration of HIV and substance abuse treatment programs, that this could be effective (Achmad et al., 2009). In addition, family-based interventions can assist families in resolving stress and strain through in vivo negotiation on disagreements, role-play for handling hassles with persons outside of the family, and increasing support among family members by highlighting their shared stresses and goals. These approaches will help family to develop skills for confronting rather than avoiding problems (Ahsan Ullah, 2011).

The hope about the future of their sick relative's was higher compared to the previous study in the family of addiction patients in England (Orford et al., 2005). All of the HIV patients were in ART and some of them were in methadone treatment. ART and methadone tre-

atment have shown their effectiveness in reducing risk behavior and improving well-being (Achmad et al., 2009). The higher hope can perhaps be explained by the religious way of thinking in Indonesian people (Sallquist, Eisenberg, French, Purwono, & Suryanti, 2010). Beliefs and practices associated with religion/ spirituality are generally positively related to greater well-being, hope, optimism, purpose and meaning, adaptation to and coping with bereavement, and social support (Seybold, 2007).

This study suffers from the limitations of the representativeness of the sample due to the purposive sampling used and a modest sample size in a single, urban clinic. Patients who can access treatment in Indonesia are limited due to their affordability (Afriandi et al., 2009). However, the present study provides preliminary data about factors that influence family involvement and in our knowledge is the first study in Asia. In addition, only family who did not have the disease were included in this study to limit the effect of a disease itself, like HIV/AIDS or TBC to their perception. Therefore, findings should be generalized with caution to other settings.

Conclusion

The perceived satisfaction in the care given by health care providers is higher in family of HIV patients compared to family of TBC patients. Their hope about the future of their sick relatives is high and has no difference with family of TBC patients although family of HIV patients with IDU history perceive more problems. More attention for perceived worrying behavior of family should be given by the health providers, especially to the family of HIV patients with IDU history, to support their involvement in the HIV treatment program.

Clinical Consideration

- Providing good contact, information, and support by the health care provider can improve the family involvement in the care of their sick relatives
- More attention from health care provider in the personal experience of family in the treatment is needed
- Drug use and problems that have impact on the family of HIV patients with IDU history should be addressed to reduce worry in the family
- The high hope in the family should be maintained to ensure the support of the family to their sick relatives

Disclosures

The authors report no real or perceived vested interests that relate to this article (including relationships with pharmaceutical companies, biomedical device manufacturers, grantors, or other entities whose products or services are related to topics covered in this manuscript) that could be construed as a conflict of interest.

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Conflicts of Interest

There are no conflicts of interest

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chapter 8

Summary and general discussion

Injecting drug users are fuelling the HIV epidemic in large parts of Indonesia and harm reduction has been implemented to prevent, control and treat HIV among drug users. Most of the intervention programs for reducing HIV transmission in Indonesia are based on data from industrialized countries and there may be a need to tailor these interventions to the socio-cultural context and specific conditions of Indonesia. The general aim of this thesis was to study the biopsychosocial characterization of people who use injecting drugs in relation with the implementation of harm reduction strategies in West Java Indonesia. The framework concept in this thesis is shown below:

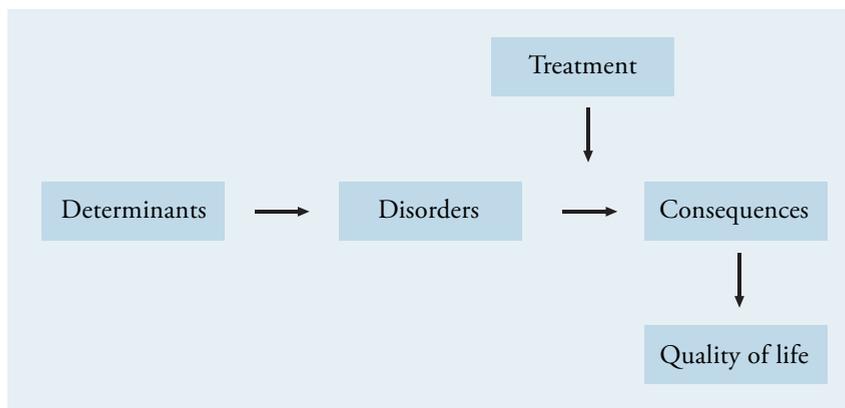


Figure 8.1. Framework of the thesis on people who inject drugs and HIV transmission in Indonesia: a biopsychosocial approach. Determinants, which include the interaction of genetics, environment, and personality factors, affect the vulnerability to have disorders.

The most common disorders in people who inject drugs are substance use, psychiatric, and physical disorders. All of these comorbidities interact and are influenced by their treatments. The disorders and their treatments have consequences in the personality, environment, and the expression of the gene which at the end will determine the quality of life.

We implemented this framework concept by reviewing the existing theories of the aetiology of addiction and the interaction of addiction, physical comorbidity, and psychiatric comorbidity from a biopsychosocial point of view. We also examined the socio-demographic characteristics, the risk behaviours, co-occurring disorders, access to drug treatment, quality of life of people who inject drugs in Indonesia, and factors which influence family involvement in HIV care. This final chapter represents the key findings from our research, recommendations, and the strength and limitations of the study.

Key findings

Addiction is a multidimensional disorder so individualized interventions are need

The concept of injecting drug use is often overly simplified, with little attention for the underlying complex problems of drug addiction. Too often, service providers and policy makers propagate needle exchange programs and/or pharmacotherapy as the 'one fits all' harm reduction strategy without sufficient attention to the variety of main problems of addicted patients.

Chapter 2 provides a review on the aetiology of addiction, including genetics, drug induced changes in the brain, and environmental factors; risk behaviours; co-occurring physical, psychiatric, and social problems; and prevention and treatment. The vulnerability for addiction is a result of the combination of different biopsychosocial factors that are unique for every person. The results of our studies presented in chapter 3, 4, and 5, support this conclusion. Our studies show that people in Indonesia who inject drug can not be considered as a single entity. There are former and current injecting drug use presenting different physical, psychological, and addiction co-occurring problems. Proper assessment is needed to diagnose individual problems and develop tailor-made treatment recommendations.¹ Because problems of IDU are mostly complex, we propose the use of a biopsychosocial approach.

High risk behaviour among former and current injecting drug users

It has been reported in literature that a high number of injecting drug users (IDU) change from injection to non-injection drug administration^{2,3}. We performed therefore a study (chapter 3) in Bandung, West Java whereby people who inject drugs were recruited by respondent driven sampling and found that ninety-two out of 210 (44%) were self reported former IDU. HIV-infection was high among former (66%) and current (60%) IDU.

In addition, we found that none of them was free from substance use in the 30 days previous to the interview and that excessive use of alcohol was significantly associated with sexual risk behaviour. Both former and current IDU were commonly having sexual risk behaviour as well as tattoos or piercings, while 13% of former IDU were still exposed to contaminated injecting equipment. Risk behaviour had no association with better knowledge of HIV transmission or ever accessing drug treatment program (chapter 4 and 5).

Former IDU may contribute significantly to the development of the HIV epidemic in Indonesia because HIV is highly prevalent in this group while sexual risk behaviour is very common. Furthermore, compared with current IDU, former IDU also have more sexual contact with general population. HIV prevention programs should therefore also target former IDU, emphasizing the need for testing and treatment of HIV and other blood born infections, as well as addressing sexual and other risk behaviour.

Methadone maintenance and needle syringe programs, which have proven very effective in reducing injecting risk behaviour^{4,6}, may not be indicated or even harmful for ex- or sporadic injectors. Former IDU might benefit more from relapse prevention or other psychosocial interventions addressing their current drug use and other non-injecting risk behaviour.

Limitation of access to drug treatment facilities

Globally, IDU often have poor access to substance abuse treatment (SAT) facilities since drug use is illegal and highly stigmatized⁷. Our studies in people who inject drug whereby those who had not and had ever accessed SAT (chapter 4) showed that those who had ever accessed SAT had more severe drug problems and better education compared to those who had never accessed SAT.

The comparison of people who inject drug and were in methadone treatment with those who never accessed drug treatment (chapter 5) showed that those who never accessed treatment were younger compared to methadone patients (28 ±4 vs. 30 ±4 years), had a shorter history of injecting drug use, lower education, lower level of occupation and income. However, the perceived problems and treatment needs related to physical, psychiatric, and drug abuse conditions among those groups were comparable.

Furthermore, injecting drug users accessing drug treatment at some point but not in the last 30 days, showed the most severe problems and the highest treatment needs, especially related to drug and psychiatric problems. In conclusion, substance abuse treatment is mostly accessed by injecting drug users with severe (drug) problem and by those with higher socio-economic status. These findings are in line with other studies that found that most IDU accessed treatment only when they were in emergency or crisis^{8,9}. In addition, reports from other low income countries provide substantial evidence that the reduction of the treatment cost improves access and adherence, and in turn, the success of public health programs¹⁰⁻¹³. Similar conclusions are made within the IMPACT program but will be extensively reported elsewhere.

Substitution treatment and traditional based treatment are the most commonly used drug treatment facilities but only substitution treatment is associated with access to HIV care

Antiretroviral treatment does not only dramatically improve life expectancy and quality of life but has been proven to reduce the transmission of HIV as well^{14,15}. From the 2010 UNAIDS report, it has shown that the coverage of antiretroviral treatment is around 30% in East, South, and South-East Asia. Injecting drug users constitute a substantial proportion of the total population of HIV infected subjects and substance abuse treatment (SAT) can be used therefore as an entry-point for HIV care.

We performed a study (chapter 4) and recruited people who inject drugs by respondent-driven sampling in an urban setting in Java, Indonesia and found that 77% of 210 IDU had accessed SAT at least once (chapter 4). IDU who had accessed SAT had better knowledge on HIV, better access to HIV testing and treatment, HCV testing, and psychiatric treatment. The most widely used SAT were opioid substitution (44%) and traditional/faith-based treatment (43%). Accessing substitution treatment and residential drug-free treatment was significantly associated with HIV testing, whereas accessing substitution treatment and other medical services was significantly associated with HIV care.

People who inject drug and their families often hide drug-related problems and avoid the regular SAT facilities, as this may further increase the social ostracism faced by the families. Because of unawareness or absence of easily accessible treatment facilities, particularly in resource-limited countries, people who inject drugs and family members may prefer to approach alternative service providers such as faith healers¹⁶. Access to these frequently utilized traditional/faith based treatment do however results infrequently to HIV testing or HIV treatment. More collaboration between drug-intervention programs, HIV testing and care facilities, and traditional/faith-based treatment organisations is needed so that common goals are identified and HIV testing and care are offered to those in need for it¹⁷.

People who inject drug often face multiple concurrent disorders

People who inject drug and who have physical, psychiatric, and substance use disorder comorbidities are likely to engage in high-risk behaviours, and when untreated, continue to fuel the HIV epidemic¹⁸. Some studies have also shown that physical¹⁹, psychiatric^{20, 21}, and drug abuse co-occurring disorders^{22, 23} reduce the effectiveness of the methadone maintenance treatment (MMT).

Chapter 5 describes the prevalence of physical, psychiatric, and drug abuse co-occurring disorders among MMT patients in Bandung, Indonesia and determine the association between the severity of the co-occurring disorders and the quality of life. The most frequent co-occurring disorders in 112 MMT patients were hepatitis C (92%), HIV (77%), benzodiazepine abuse (56%), and anxiety disorders (32%). Patients in MMT had one (26%), two (47%) or three (27%) co-occurring disorders. Severity of psychiatric and physical problems was associated with lower quality of life.

One hundred fifty four people who inject drug but who were not enrolled in a MMT program were recruited by respondent driven sampling for comparison and showed similar co-occurring problems. It is concluded that comprehensive and preferably integrated treatment facilities that can also address the common co-occurring disorders need to be formed in Indonesia to anchor significant impacts on reduction of risk behaviour, improve MMT effectiveness and the quality of life of people who inject drugs.

Psychiatric comorbidity in people who inject drugs has a multidimensional etiology

Psychiatric comorbidity in IDU is not only associated with poorer quality of life^{21, 24} but may influence substance abuse treatment outcome as well. Strikingly, psychiatric problems are rarely addressed while patients participate in substance abuse treatment programs²⁵.

A review in chapter 6 shows that psychiatric disorders can occur before or during drug abuse

and are also associated with substance abuse and physical comorbidity and its treatments. Several psychiatric factors may increase the vulnerability to become a drug user. Frequently found are personality traits, such as negative temperament and disinhibition²⁶; impulsivity, sensation-seeking, novelty seeking, reward-sensitivity²⁵; antisocial personality²⁷; and childhood trauma, including physical, sexual, and emotional abuse/neglect²⁸.

The abuse of several drugs (poly-drug use) is a common pattern among IDU and increases the vulnerability to suffer from psychiatric disorders^{23, 29}. HIV infection may increase the vulnerability for having a psychiatric disorder via the effect of HIV on the central nervous system³⁰, psychosocial factors³¹, and/or antiretroviral-related adverse effects such as cognitive impairment, depression, anxiety, and psychosis^{32, 33}. Treatment for addictive and psychiatric disorders leads to an increase of adherence to medical regimes, thus reducing the risk of the early emergence of treatment-resistant HIV and tuberculosis^{18, 34, 35}.

Research on psychiatric co-morbidities in people who inject drugs in Asia and Africa is needed

The prevalence of HIV in IDU in many countries is stable or decreasing. However, in most of the low and middle income countries in Asia and Africa, the prevalence still increases significantly³⁶. IDU with psychiatric comorbidity are likely to engage in high-risk behaviour¹⁸. Little is known about psychiatric problems in IDU in Asia and Africa^{10, 36-39}.

Chapter 6 provides a review about psychiatric co-morbidities in IDU in Asia and Africa. The numbers of studies are scarce but we found that the prevalence of psychiatric co-morbidities is high and comparable with the prevalence in industrialized countries. Most of the scientific papers that were published in the last two years were focusing on physical co-morbidities, risk behaviours, and health policies. More research is needed in Asia and Africa addressing psychiatric problems in IDU using optimal methodology, such as large sample size, validated questionnaires, and standardized diagnosis. Finally, evidence-based interventions addressing psychiatric comorbidity in IDU are generally very limited and should be studied more in detail.

The hope of family for the future of HIV patients is high although they perceive more worry about their sick relative

Involvement and support from the family are strongly associated with better physical and psychological adjustments in patients live with HIV^{40, 41}. The intention to access substance abuse treatment in people who use drugs is also influenced by their family⁴². Characteristics that are most influential in family involvement include satisfaction in the care given by health care providers, perceptions of the problems, and believing that problems can be changed⁴³.

In chapter 7 we explore the satisfaction in receiving care from health care providers, perceived problems, and hope of family members in the care of HIV-infected patients with and without a history of injecting drug use compared to patients treated for tuberculosis. Family members (n = 123) were recruited through purposive sampling: 36 family members of HIV-infected IDU patients; 43 family members of HIV-infected patients without IDU history; and 44 family members of patients with tuberculosis.

Compared to family members of patients with tuberculosis, the family of HIV-infected patients showed more satisfaction in the care given by health care providers especially regarding the information that was provided. Family members of HIV-infected IDU patients perceived more problems concerning their sick relatives than the two other groups. The problems were related to the harmful impact of smoking/ alcohol/ substance use on their sick relatives as well as on the family. Integration of HIV and substance abuse treatment programs has been proven to be more effective and may as such alleviate distress experienced by patients and their family members^{34, 35, 44}. In addition, family-based interventions can support families to develop skills for confronting rather than avoiding problems^{45, 46}.

We found that hope for the future of sick relatives was generally high and comparable in the three groups. All of the HIV-infected patients were treated with ART and some of them participated in MMT program. The effectiveness of both treatments is well recognised^{6, 47, 48}. In conclusion, family members of HIV-infected IDUs experience many problems and attention of health care providers for these problems may strengthen family involvement and support of treatment of IDUs.

Strengths and limitations of the study

The study was conducted as part of the multidisciplinary IMPACT program. The results of the present studies in combination with the results from other IMPACT researchers will provide a comprehensive picture of the status of the prevention, control and treatment of HIV among IDU in West Java, Indonesia. The socio-demographic characteristics of people who inject drugs in our study are comparable with other studies from Indonesia^{44, 49-56}. This indicates the representativeness of our samples.

Our studies have several important limitations. First, no meta-analysis or systematic review was used in the review article. Secondly, people who inject drug and their family are often difficult to reach, questioning how representative the samples are. Respondent driven sample was used (chapter 3 and chapter 4) to minimize this risk^{57, 58}. Still, some IDU who are not in the social networks with these participants can not be recruited through respondent driven sampling⁵⁹. In the methadone clinic (chapter 5), data were obtained from 60% of the population and not all of the participating patients completed the whole interview and examination. In chapter 7, purposive sampling was used in a single, urban clinic with a rather small sample size. Third, the generalization of the results to the overall Indonesia situation should be carefully considered, since substance abuse treatment facilities are mostly limited to the big cities. In 2010, only 49 opioid substitution treatment sites were present in Indonesia⁶⁰, while it was estimated that there were more than 219,000 IDU⁶¹. Fourth, all of the studies are cross sectional studies. With this method it is not possible to find a causal relation.

Recommendation

Based on the result of the studies described in this thesis and taking the strengths and limitations into account we would like to make some recommendations to policy makers, clinicians, education experts, and recommendations for future research.

Policy makers

Widen the scope from opioid substitution treatment towards addiction treatment

As has been the case in many countries, it was the HIV epidemic that first drew attention to changes in drug-taking practices in Indonesia⁶². A recent report from the national AIDS Committee shows that the trend of HIV transmission in Indonesia has shifted from injecting drug use to heterosexual transmission and mother to child transmission. In 2006, 52% of the patients acquired HIV-infection through use of unsterile needles while this figure is reduced to 16% in 2011. Question is however how former IDU with sexual risk behaviour are categorized in 2011.

A very positive development is however that the estimated number of people who inject drugs in Indonesia is also decreasing: in 2006 the reported number of IDU was 219,000 compared to 106,000 in 2009⁶³. Reduction of the programs provided for IDU by NGO will have consequences in increasing again the contribution of IDU in HIV transmission.

On the contrary with the number of IDU, the number of drug users in Indonesia is increasing from 2.2 percent (4 million) in 2010 to 2.8 percent (5 million)⁶⁴. This apparent contradiction is explained by the change from the route of administration of the drugs commonly used: mostly from injection to non-injection drug use but also vice versa^{2,3}. In addition the type of drug will also influence the route of administration and/or sexual risk behaviour.

In chapter 2, it is shown that neither current IDU nor former IDU are abstinent from drugs. The use of amphetamine type stimulants (ATS) is increasing in Asia in recent years^{36, 65-67} and the use of ATS, heroin, or alcohol is indeed associated with increased injecting or/and sexual risk behaviour⁶⁵⁻⁷⁰. Sexual risk behaviour may form the bridge between IDU and the general community. Many studies have shown that the prevalence of psychiatric disorders and drug use in people who conduct sexual risk behaviour is high and the use of mood elevating drugs such as SSRI may reduce the sexual risk behaviour⁷¹. It is important to care for these patients, not only because of their problems but also because they may play a key role in the spreading of HIV. The new regulation by Indonesian government in 2011 (Peraturan Pemerintah no 25 tahun 2011) states that narcotic drug users or their family should attend to selected treatment facilities appointed by the government. This regulation can be seen as an opportunity to provide substance abuse treatment but opens possibilities to simultaneously provide other treatment programs as well.

Provide comprehensive treatment for complex comorbidity

Most of the people who inject drugs suffer from physical, psychiatric, and drug use co-occurring disorders. The HCV & HIV prevalence among IDU in Indonesia (chapter 2 and 4) were among the highest compared to other countries^{49, 72-75}. The current and life time psychiatric problems and symptoms were high and comparable with other studies^{21, 72, 76-79}. Most of people who inject drugs in Indonesia use heroin but the poly-drug use is common, especially in combination with benzodiazepine. This is in line with other studies^{32, 80-83}. The overall coverage of the intervention programs is still low (84) and the link with care for co-occurring problems is limited, although such link will increase the effectiveness and higher utilization of services⁶.

A major challenge is therefore to build alliances and networks which will allow the pooling of resources and collaboration between service providers and/or health care workers. For instance, presently services for HIV/AIDS, substance abuse treatment and psychiatric treatments are provided by different health care workers using different facilities. Providing comprehensive and integrated services in specialized treatment centres will greatly improve effectiveness since people who inject drug often do not adhere to referral advices⁸⁵. Several approaches can be developed, such as training of staff so that they are able to deal with the various problems. If more complicated problems present, experts who visit facility on a regular basis might be consulted. Collaboration and agreement with several service providers, case discussion with different experts in different fields and other approaches will add to maximize the effectiveness of a comprehensive, multidisciplinary team program.

Bringing services to the community level

Most of the budget for drug addiction and HIV programs in Indonesia come from external funding⁸⁶. In order to make the programs sustainable, cost-effective programs are needed. One of the opportunities is to bring the services into a community level. Scaling up the community clinics for voluntary consultation and testing of HIV will improve access, promote earlier detection and treatment. Access for IDU still has to be improved since most of IDU who come to the drug treatment (chapter 5) and to HIV clinic in Bandung⁸⁷ tend to have more advanced disease

Bringing services to the community level could reduce the burden of the hospital clinic to orient itself more towards the treatment of AIDS patients⁸⁸. At present, HIV prevalence rates in the general community are however very low and we advice therefore to limit HIV services to accredited hospitals, primary health centres, and clinics with specialized health care workers. However, on the contrary, the prevalence of legal and illegal drug use in the general population is quite high. Therefore, in 2011, the president instructs to improve the prevention, treatment, and rehabilitation for people who use drugs⁸⁹. Drug use screening process which is implemented in integration with daily primary health services will lead to early detection and intervention. This can prevent the occasional drug users to become addicts.

Increase the involvement of the family and spiritual based and non governmental organizations in treatment programs

Indonesia, like other Asian countries, is a collectivist society. People are integrated from birth onward into strong, cohesive in-groups, often extended families⁹⁰. Involvement and support from the family are strongly associated with better physical and psychological adjustment in people live with HIV^{40, 41}. Furthermore, existing health care services seem fragmented and lack a continuum of care for people who inject drugs. Health care providers are challenged to strengthen the role of family caregivers and other community services to work collaboratively in addressing HIV related prevention and care activities. Training and knowledge dissemination through interactive dialogues are key elements to develop effective models of community health based care for people live with HIV⁹¹.

Furthermore, most people in Indonesia are religious⁹². Beliefs and practices associated with religious/ spirituality are generally positively related to greater well-being, hope, optimism, purpose and meaning, adaptation to and coping with bereavement, and social support⁹³.

Many families bring their relatives with drug or moral problems to spiritual/ traditional faith based treatment facilities. Spiritual leaders or people providing spiritual/ faith based treatment may however be insufficiently informed about medical problems such as blood borne infections like HIV and hepatitis B/C. Communication and training of providers of spiritual/ traditional faith based treatment services may increase access to HIV care. In addition, faith based organizations might contribute to daily care for HIV-infected patients. Faith based organizations are actually a type of NGO that basically operate on the basis of religious missions. In Indonesia, faith based organizations usually have a large number of followers and/or members capable of dissemination of knowledge throughout the country⁹¹, so influencing them to promote HIV testing and treatment could have a large effect.

Destigmatize people who use drugs and people with HIV

People who use drugs and have HIV are frequently stigmatized as they are associated with immoral behaviour^{45, 94}. The stigma and discrimination is a common phenomenon not only at individual level, but also at the familial and institutional levels^{95, 96}. Stigma and discrimination come on top of the stress already caused by the disease itself⁴⁵. High stigmatization leads to less help-seeking and serves as a major barrier to treatment⁹⁷. Television programs and advertisements are watched by most people in Indonesia and is a tool to disseminate information^{98, 99}. It can be used improve the knowledge of the general public regarding the addiction and HIV and how to treat these conditions so that stigmatization is reduced while access to care is increased.

The use of uniform variables in surveillances evaluating harm reduction programs

A recent review concluded that the calculation of the coverage of the HR programs was limited by inconsistent and imperfect data estimating the size of the IDU population⁸⁴. For example, the term ‘injecting drug users’ tends to be used without a succinct definition, without specifying current or former drug use, frequency, duration, type of injected drug(s), context (e.g. imprisonment), and often without information on somatic, psychiatric and psycho-social problems etc.

Confusing is also the term “coverage of opioid substitution treatment”. It is often not clear whether methadone maintenance treatment or buprenorphine or both are being evaluated. Is HIV treatment given to those that need it? The characterisation of the study population is also not always clear: inclusion of those still in care or those that were ever enrolled in the program. Standardisation of terms, conditions and time frames is a prerequisite for proper evaluation of intervention programs.

Clinicians

Physical comorbidity

People who inject drugs may suffer from several physical disorders at the same time, including blood born infections such as HIV and hepatitis B/C, skin abscesses, sepsis with or without endocarditis, drug toxicities due to drug-drug interactions or poly-pharmacy etc¹⁸. When properly prescribed and with optimal adherence, antiretroviral therapy has been shown to improve dramatically the prognosis of HIV infection and many of its comorbidities, including tuberculosis, viral hepatitis, and renal and cardiovascular disease¹⁸.

Many Indonesian clinicians are however still reluctant to prescribe HIV treatment to people who inject drugs. Some of them tell the patients that addiction treatment needs to be discontinued before anti retroviral treatment can be initiated. Simultaneous clinical management of multiple comorbidities in HIV-infected drug users might result in complex pharmacokinetic drug interactions that must be adequately addressed. Moreover, interventions to improve treatment adherence by addressing psychiatric problems, drug use, and social support are needed¹⁸.

Psychiatric comorbidity

Assessment and treatment should be conducted carefully because psychiatric problems can be present independently or as a result of HIV, HCV, substance abuse, other comorbidity and their treatments. Interventions to increase referral and uptake from/ to mental treatment are needed. The psychiatric treatment is still underutilized, especially because of the stigmatization of people with psychiatric problems^{100, 101}.

Substance related comorbidity

Several psychiatric factors may increase the vulnerability to become a drug user. Frequently found are personality traits²⁶, impulsivity, sensation-seeking, novelty seeking, reward-sensitivity²⁵, antisocial personality²⁷, and childhood trauma²⁸. These psychiatric factors influence treatment outcome and are rarely addressed in substance abuse treatment programs²⁵. Drug use, especially poly drug use increases the vulnerability to psychiatric disorders^{23, 29}. Beside substitution treatment with proven effectiveness^{49, 102, 103}, psychosocial support should also be considered. Given the long-term social, emotional, and cognitive impairments associated with substance use, these effects are noteworthy and comparable to other impairments commonly found in psychiatry¹⁰⁴.

Using a biopsychosocial approach to support a patient

A biopsychosocial model not only emphasizes the need to respect the unique circumstances and perspectives of each client, but it also supports the view of individuals as powerful agents for self-determination. Rather than having the view that individual outcomes are largely the complex product of external determinants, the biopsychosocial model appreciates the significant role played by individual qualities of resiliency and personal agency. As a best practices model, biopsychosocial accommodates and supports non-linear systems theories which place individuals and behaviours within contexts of biological, family and socio-cultural systems, and which view individuals as active participants in on-going system maintenance and change dynamics¹⁰⁵. Management of chronic disease like addiction and HIV also requires an active role in decision making, problem solving, and implementation of a personalized treatment plan to achieve better health outcomes¹⁰⁶.

Education and training

Addiction medicine for addiction professionals

In Indonesia, addiction medicine is not yet recognized as a medical (sub)specialty and there is neither an addiction medicine curriculum nor formal addiction medicine training available. Currently there are about 200 professionals working in addiction care, of which, according to recent research, about 17% never received addiction training. Most of these addiction care professionals only received a short training in opioid substitution therapy, consisting

of a few days training in methadone and buprenorphine prescription and dispensing. Only 30% of all Indonesian addiction professionals consider addiction as a brain disease, whereas about 70% consider faith-based and long-term residential treatments to be the most appropriate treatment modalities¹⁰⁷. The lack of proper knowledge among professionals working with HIV-infected people who inject drugs, in combination with stigmatization, influence their attitude in the care for patients and limits the quality level of psychiatric and medical interventions to these groups⁹¹. Therefore, training modules for specialized health care workers need to be developed and given. These modules should not only include addiction medicine but has blood borne infections as learning objective as well. Special certification from the ministry of health should be obtained to be able to work in addiction treatment. Each institution that has been appointed by ministry of health as a treatment centre should employ one doctor who possesses such certificate.

Addiction medicine as curriculum in medical school

Topics regarding addiction and HIV should be included in the curriculum of medical school. The curriculum should subsequently cover the psychological, behavioural, and immunological aspects of these conditions. This training does not only supplies the basic knowledge that is needed to understand addiction and HIV but will also reduce stigma and provides the insight of a comprehensive and integrated approach to medical problems.

Addiction medicine as curriculum in primary and secondary school

Drug use starts in Indonesia mostly at a very young age (14 years) compared to other countries such as Australia, Canada, China, Iran, Israel, Netherland, Poland, Thailand, and USA^{20, 21, 23, 49, 74}. Education to prevent drug use should therefore be provided in primary and secondary schools.

In Indonesia sex and drug issues are often regarded as sensitive and life skills education was embraced a decade ago to prevent sexual intercourse and drug related risk behaviour in a culturally appropriate way. Life skills are defined as the ability of individuals to employ adaptive and positive behaviour to deal effectively with demands and challenges of daily life. The aim of life skills education is to strengthen abilities that help promote mental well-being and competence in young people as they face the realities of life¹⁰⁸. Information regarding addiction and reproductive health should be given in an appropriate way to increase awareness and understanding of students however not increasing their curiosity to try drugs or sexual intercourse.

Recommendation for future research

The findings in this thesis answer only a part of the complex problems in people who inject drugs in relation with HIV transmission. More information regarding estimation of the number of people who inject drugs in Indonesia is required to adjust the number of treatment centres. Surveillance using the same variable criteria to understand the problems and evaluate the current intervention is needed to be done regularly so the intervention programs can be adjusted to the current situation. More studies regarding factors associate with the risk behaviour, such as drug use, psychiatric co-morbidities, in other most at risk groups for HIV transmission (commercial sex workers and men who have sex with men) are also important to develop more suitable intervention programs to prevent further HIV transmission.

The high co-morbidities in people who inject drugs (chapter 2, 4, 5) indicate the needs to explore comorbidities in all HIV patients.

All of the studies in this thesis are cross-sectional studies which are very important for assessing the problems and to understand the characteristics of the target population. The next step is to translate these findings into action, for example for revising and developing the intervention programs. Below are several action researches that should be prioritized.

The lack of information and services is mainly in psychiatric problems and their treatments (chapter 4, 5, and 6). Randomized control trial to find the effective psychiatric intervention (cognitive behavioural therapy (CBT), psychotropic drugs, and combination of CBT and psychotropic drugs) for HIV patients with and without injecting drugs history can be done using adherence to HIV treatment, immunological response, drug use, risk behaviour, and quality of life as parameters.

The prevalence of physical, psychiatric, and substance use disorders in people who inject drugs is high (chapter 2, 3, 4, 5, 6) and access to treatment is still limited. Cohort for comparing community based service and hospital based service is needed to find the most effective approach. Baseline and follow-up data on physical, psychiatric, and drug use severity, quality of life, laboratory results (Hb, CD4), referral uptake, and adherence to treatments can be used as determinants.

Traditional/ faith based treatment/ organizations and social supports in Indonesian society are the strength which has not been involved adequately in the addiction and HIV intervention programs (chapter 4 and 7). Information regarding HIV transmission, methods of preventing HIV infection, HIV treatments, factors that can increase vulnerability to use drugs, and addiction treatment is provided to religious leaders and their assistants, who in turn educated their communities during home visits and at religious gatherings. Knowledge, attitude, and practise regarding HIV and addiction treatment of religious leaders before and after training can be used as a direct parameter. The comparison of access to HIV and drug treatments, risk behaviour, and HIV prevalence in community between baseline data and follow-up data few years after the intervention can determine the successful of the intervention programs.

The change from injecting to non-injecting drug use is common so the proportion of former injecting drug users among IDU is significant (chapter 3). The addiction severity is influenced by many factors (chapter 2 and 6). Therefore, selection of appropriate addiction treatment which is beneficial for patients and in public health point of view is crucial. Methadone treatment should only be provided to those who need it so it is not bring further harm. Good knowledge and skills in medical staffs who work in addiction field can reduce the inappropriate addiction treatment. Level of knowledge and skills in handling addiction patients before and after training can be used to determine the most effective addiction training programs.

The studies above can be done in the comprehensive way. A project like IMPACT gives an opportunity to study problems from different points of view, in different settings, and using interdisciplinary expertise. The result from the studies can be used as a background

for other studies. By working together, a comprehensive understanding of the problems are formulated. Such kind of project also facilitates learning of all program staff by grooming a positive and safe learning environment (we learn from mistakes and successes) and opens new horizons with new ideas. Using a learning organization approach, emphasizing common goals, applying multi-disciplinary learning, evidence-based interventions, and strengthening individual and organizational capacity proved to be successful¹⁰⁹. Applying this approach also proved quite a challenge. Understanding the cultural differences and organizational management are the important key success of future programs.

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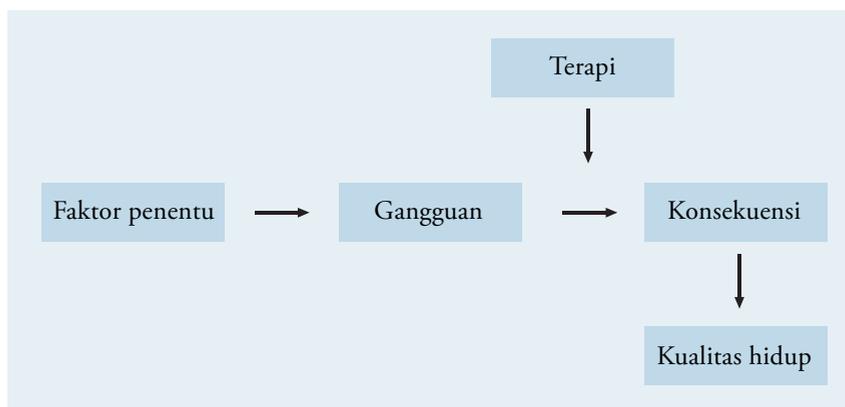
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Summary and general discussion in Indonesian Ringkasan dan pembahasan umum

Pengguna narkoba suntik (penasun) menyebabkan epidemi HIV di sebagian besar daerah di Indonesia dan penanggulangan dampak buruk telah diimplementasikan untuk mencegah, mengontrol, dan mengobati HIV di kalangan pengguna narkoba suntik. Sebagian besar program intervensi untuk menurunkan transmisi HIV di Indonesia didasarkan pada data dari negara-negara maju dan mungkin dibutuhkan suatu pengembangan program intervensi yang sesuai dengan keadaan sosio-kultural dan kondisi yang spesifik di Indonesia. Tujuan umum dari tesis ini adalah untuk mempelajari karakteristik biopsikososial dari penasun dalam hubungannya dengan implementasi strategi pengurangan dampak buruk di Jawa Barat, Indonesia. Bagan alir tentang konsep dalam tesis ini ditunjukkan pada gambar di bawah ini:



Gambar 8.1. Bagan alir dari tesis tentang penasun dan transmisi HIV di Indonesia: sebuah pendekatan biopsikososial. Beberapa faktor penentu seperti faktor-faktor genetik,

lingkungan, dan kepribadian mempengaruhi kerentanan seseorang untuk mengalami adiksi. Gangguan yang paling umum terjadi pada penasun adalah penggunaan narkoba jenis lainnya, gangguan psikiatrik, dan fisik. Semua komorbiditas ini berinteraksi dan dipengaruhi juga oleh terapinya. Sebaliknya, gangguan dan terapinya juga mempengaruhi kepribadian, lingkungan, dan ekspresi gen yang pada akhirnya keseluruhan interaksi akan menentukan kualitas hidup.

Kami mengimplementasikan konsep bagan alir di atas dengan mengulas teori-teori yang telah ada tentang penyebab adiksi dan interaksi adiksi, komorbiditas fisik serta psikiatris dari sudut pandang biopsikosial. Kami juga melakukan penelitian tentang karakteristik sosio-demografik, perilaku berisiko, komorbiditas, akses terhadap layanan adiksi, kualitas hidup penasun di Indonesia, dan faktor-faktor yang mempengaruhi keterlibatan keluarga dalam penanganan HIV. Pada akhir bab ini akan dipresentasikan temuan utama dari penelitian kami, rekomendasi, dan kelebihan serta kekurangan dari penelitian tersebut.

Temuan utama

Adiksi merupakan gangguan multidimensi sehingga intervensi individual diperlukan

Konsep tentang penasun seringkali terlalu disederhanakan, dengan sedikitnya perhatian pada masalah-masalah kompleks yang mendasari penggunaan NAPZA. Seringkali penyedia jasa layanan dan pengambil kebijakan mempromosikan layanan pertukaran jarum suntik dan/ atau terapi obat sebagai strategi pengurangan dampak buruk yang sesuai untuk semua penasun tanpa memberi perhatian yang cukup pada berbagai masalah utama lainnya dari penasun.

Bab 2 memberikan sebuah ulasan tentang penyebab adiksi, seperti genetik, perubahan pada otak akibat penggunaan narkoba, dan faktor-faktor lingkungan; perilaku berisiko; masalah fisik, psikiatrik, dan sosial yang terjadi bersamaan; pencegahan; dan terapinya. Kerentanan seseorang untuk mengalami adiksi adalah hasil dari kombinasi berbagai faktor biopsikosial yang unik untuk setiap orang. Hasil dari penelitian-penelitian yang kami tampilkan di bab 3, 4, dan 5 menunjang kesimpulan ini. Penelitian kami menunjukkan bahwa mereka yang menyuntik narkoba di Indonesia tidak dapat dianggap sebagai satu kesatuan tunggal. Mereka terdiri dari mantan penasun dan penasun aktif yang memiliki masalah fisik, psikologis, dan adiksi yang berbeda-beda. Penilaian yang tepat diperlukan untuk mendiagnosis masalah individual dan mengembangkan rekomendasi terapi individual yang sesuai.¹ Karena masalah pada penasun pada umumnya sangat kompleks, kami mengajukan penggunaan penanganan dengan pendekatan biopsikosial.

Perilaku berisiko tinggi di kalangan mantan penasun dan penasun aktif

Telah dilaporkan di berbagai literatur bahwa sejumlah besar penasun berubah dari pemakai narkoba menggunakan jarum suntik ke pengguna narkoba tanpa memakai jarum suntik^{2,3}. Oleh karena itu, kami melakukan suatu penelitian (bab 3) di Bandung, Jawa Barat dimana penasun direkrut menggunakan metode respondent driven sampling dan ditemukan bahwa 92 dari 210 (44%) melaporkan dirinya adalah mantan penasun. Prevalensi infeksi HIV tinggi di kalangan mantan penasun (66%) and penasun aktif (60%).

Sebagai tambahan, kami menemukan bahwa tidak ada dari mereka terbebas dari

penggunaan narkoba dalam 30 hari terakhir sebelum wawancara dan bahwa penggunaan alkohol secara berlebihan berhubungan erat dengan perilaku seksual berisiko. Baik mantan penasun maupun penasun aktif pada umumnya memiliki perilaku seksual berisiko dan juga penggunaan tato atau tindik yang berisiko, sementara 13% dari mantan penasun masih terpapar pada peralatan menyuntik yang terkontaminasi. Perilaku berisiko tidak berhubungan dengan pengetahuan tentang transmisi HIV yang lebih baik atau pernah tidaknya mengakses program terapi adiksi (bab 4 dan 5).

Mantan penasun dapat berkontribusi secara nyata pada penyebaran epidemi HIV di Indonesia karena prevalensi HIV pada kelompok ini tinggi sementara perilaku seksual berisiko di kelompok ini juga umum. Lebih lanjut, dibandingkan dengan penasun aktif, mantan penasun memiliki lebih banyak kontak seksual dengan populasi umum. Oleh karena itu, program pencegahan HIV sebaiknya juga menjadikan mantan penasun sebagai sasaran program, dengan penekanan pada pengetesan dan terapi HIV dan infeksi menular melalui darah lainnya dan juga penekanan pada masalah perilaku seksual berisiko dan perilaku berisiko lainnya.

Program terapi metadon dan pertukaran jarum suntik, yang telah terbukti sangat efektif dalam menurunkan perilaku menyuntik berisiko⁴⁻⁶, dapat merupakan terapi yang tidak diindikasikan atau bahkan dapat membahayakan untuk mantan penasun atau penasun sporadis. Mantan penasun mungkin akan lebih mendapat keuntungan melalui dari program pencegahan kekambuhan atau intervensi psikososial lainnya, menekankan pada penggunaan narkoba saat ini dan perilaku berisiko non suntik lainnya.

Keterbatasan untuk mengakses fasilitas terapi narkoba

Secara umum, penasun memiliki akses yang buruk ke tempat-tempat terapi narkoba karena penggunaan narkoba ilegal dan sangat distigmatisasi⁷. Penelitian kami pada penasun yang pernah mengakses dan tidak pernah mengakses terapi narkoba (bab 4) menunjukkan bahwa mereka yang pernah mengakses terapi narkoba memiliki masalah narkoba yang lebih berat dan pengetahuan yang lebih baik dibandingkan dengan mereka yang tidak pernah mengakses layanan terapi narkoba.

Perbandingan antara penasun yang sedang dalam terapi metadon dengan penasun yang tidak pernah mengakses terapi narkoba (bab 5) menunjukkan bahwa mereka yang tidak pernah mengakses terapi berusia lebih muda dibandingkan pasien metadon (28 ± 4 vs. 30 ± 4 tahun), memiliki masa penggunaan narkoba suntik yang lebih pendek, pendidikan yang lebih rendah, serta tingkat pekerjaan dan pendapatan yang lebih rendah. Walaupun demikian, persepsi mereka tentang masalah dan kebutuhan terapi yang berhubungan dengan kondisi fisik, psikis, dan penyalahgunaan narkoba diantara kedua kelompok ini sebanding.

Lebih lanjut, penasun yang pernah mengakses terapi narkoba tapi tidak dalam 30 hari terakhir, memiliki masalah yang terberat dan kebutuhan terapi yang tertinggi, terutama dalam hubungannya dengan masalah psikiatri dan narkoba. Kesimpulannya, terapi narkoba sebagian besar hanya diakses oleh penasun dengan masalah narkoba yang berat dan mereka dengan kondisi sosio-ekonomi yang lebih tinggi. Hasil penelitian ini sejalan dengan penelitian lainnya yang menunjukkan bahwa sebagian besar penasun hanya akan mengakses layanan

jika mereka berada dalam kondisi emergensi atau krisis (8, 9). Sebagai tambahan, laporan dari negara berpendapatan rendah lainnya menyediakan bukti yang penting bahwa penurunan biaya terapi meningkatkan akses dan kepatuhan, yang pada gilirannya akan mensukseskan program kesehatan masyarakat (10-13). Kesimpulan yang serupa juga didapatkan dalam program IMPACT tetapi akan dilaporkan secara lebih mendalam di tempat lain.

Terapi substitusi dan pengobatan tradisional merupakan fasilitas terapi narkoba yang paling banyak digunakan tetapi hanya terapi substitusi yang berhubungan dengan akses ke pelayanan HIV

Terapi antiretrovirus tidak hanya meningkatkan secara dramatis harapan hidup dan kualitas hidup tetapi juga telah terbukti menurunkan transmisi HIV^{14, 15}. Dari laporan UNAIDS tahun 2010, dinyatakan bahwa cakupan terapi antiretrovirus adalah sekitar 30% di Asia Timur, Selatan, dan Tenggara. Penasun memiliki proporsi terbesar dari total subyek yang terinfeksi HIV dan oleh karena itu terapi narkoba dapat digunakan sebagai pintu masuk untuk terapi HIV.

Kami melakukan sebuah penelitian (bab 4) dan melibatkan penasun dengan menggunakan metode respondent-driven sampling di daerah urban di Jawa, Indonesia dan menemukan bahwa 77% dari 210 penasun telah mengakses terapi narkoba sedikitnya satu kali (bab 4). Penasun yang mengakses terapi narkoba memiliki pengetahuan tentang HIV, akses pada tes dan terapi HIV, tes HCV, dan terapi psikiatri yang lebih baik. Terapi narkoba yang paling umum digunakan adalah terapi substitusi opioid (44%) dan pengobatan tradisional/ yang berbasis keagamaan (43%). Mengakses terapi substitusi dan terapi rehabilitasi tanpa obat berhubungan nyata dengan tes HIV sedangkan mengakses terapi substitusi dan pelayanan medis lainnya berhubungan erat dengan pelayanan HIV.

Penasun dan keluarganya seringkali menyembunyikan masalah penggunaan narkoba dan menghindari terapi narkoba umum karena kemudian akan meningkatkan pengasingan sosial yang harus dihadapi keluarga. Akibat ketidaktahuan atau tidak adanya fasilitas terapi yang mudah diakses, khususnya di negara-negara dengan sumber daya yang terbatas, penasun dan anggota keluarganya lebih memilih untuk menggunakan terapi alternatif seperti dukun¹⁶. Akses ke pengobatan tradisional atau terapi berbasis agama yang sering digunakan ini tidak menunjukkan peningkatan akses ke tes dan terapi HIV. Kolaborasi yang lebih baik antara program intervensi narkoba dan fasilitas layanan tes serta perawatan HIV diperlukan sehingga tujuan umum dapat diidentifikasi dan pelayanan tes serta perawatan HIV dapat diberikan kepada mereka yang membutuhkan¹⁷.

Penasun seringkali menghadapi berbagai gangguan yang terjadi bersamaan

Penasun yang memiliki komorbiditas gangguan fisik, psikiatrik, dan penggunaan narkoba lebih rentan untuk terlibat dalam perilaku berisiko tinggi, dan jika tidak diterapi, akan terus menyebabkan peningkatan epidemi HIV¹⁸. Beberapa penelitian juga menunjukkan bahwa komorbiditas gangguan fisik¹⁹, psikiatri^{20, 21}, dan gangguan penggunaan narkoba^{22, 23} menurunkan efektivitas program terapi rumatan metadon (PTRM).

Bab 5 mendeskripsikan prevalensi prevalensi komorbiditas gangguan fisik, psikiatrik dan penggunaan narkoba pada pasien PTRM di Bandung, Indonesia dan menentukan hubungan

antara keparahan dari berbagai komorbiditas gangguan dan kualitas hidup. Komorbiditas yang paling sering pada 112 pasien PTRM adalah hepatitis C (92%), HIV (77%), penyalahgunaan benzodiazepin (56%), dan gangguan anxietas (32%). Pasien di PTRM yang memiliki satu jenis gangguan (26%), dua gangguan (47%), atau tiga gangguan (27%). Keparahannya masalah psikiatri dan fisik berhubungan dengan kualitas hidup yang lebih rendah.

Seratus lima puluh empat penasun yang tidak mengikuti program PTRM direkrut menggunakan metode respondent driven sampling untuk pembandingan dan menunjukkan gangguan komorbiditas yang serupa. Dapat disimpulkan bahwa fasilitas terapi terintegrasi dan komprehensif yang juga dapat menangani berbagai komorbiditas penyakit yang sering perlu untuk dibentuk di Indonesia untuk memberikan dampak nyata dalam penurunan perilaku berisiko, meningkatkan efektivitas PTRM dan kualitas hidup penasun.

Komorbiditas psikiatri pada penasun memiliki penyebab yang multidimensional

Komorbiditas psikiatri pada penasun tidak hanya berhubungan dengan kualitas hidup yang lebih rendah^{21, 24} tetapi juga dapat mempengaruhi hasil terapi narkoba. Yang mengejutkan adalah bahwa masalah psikiatri jarang sekali ditangani selama pasien berada di program terapi narkoba²⁵.

Ulasan pada bab 6 menunjukkan bahwa gangguan psikiatri dapat terjadi sebelum atau selama pemakaian narkoba dan juga berhubungan dengan penggunaan narkoba dan komorbiditas fisik dan pengobatannya. Beberapa faktor psikiatri dapat meningkatkan kerentanan seseorang untuk menjadi pengguna narkoba. Yang paling banyak ditemukan adalah gangguan kepribadian seperti temperamen negatif dan disinhibisi²⁶; impulsivitas, mencari sensasi, mencari hal yang baru, sensitif terhadap penghargaan²⁵; kepribadian antisosial²⁷; dan trauma masa anak-anak, termasuk pengabaian/ pelecehan fisik, seksual, dan emosional²⁸.

Penyalahgunaan beberapa jenis narkoba merupakan pola yang umum di kalangan penasun dan meningkatkan kerentanan untuk mengalami gangguan psikiatri^{23, 29}. Infeksi HIV mungkin meningkatkan kerentanan untuk mengalami gangguan psikiatri lewat efek HIV pada susunan saraf pusat³⁰, faktor-faktor psikososial³¹, dan/ atau efek samping berkaitan dengan penggunaan antiretrovirus seperti gangguan kognitif, depresi, anxietas (kecemasan), dan psikosis^{32, 33}. Terapi untuk gangguan psikiatri dan adiksi mengarah pada peningkatan kepatuhan pasien terhadap pengobatan sehingga menurunkan risiko untuk terjadinya resistensi terhadap terapi HIV dan tuberkulosis^{18, 34, 35}.

Penelitian tentang komorbiditas psikiatri pada penasun di Asia dan Afrika diperlukan

Prevalensi HIV di kalangan penasun di banyak Negara sudah stabil atau menurun. Walaupun demikian, di sebagian besar negara dengan pendapatan menengah dan rendah di Asia dan Africa, prevalensinya masih meningkat secara nyata (36). Penasun dengan komorbiditas psikiatri lebih cenderung untuk terlibat dalam perilaku berisiko (18). Sangat sedikit hal yang telah diketahui mengenai penasun di Asia dan Afrika (10, 36-39).

Bab 6 memberikan ulasan tentang komorbiditas psikiatri pada penasun di Asia dan Afrika. Jumlah penelitian yang ada masih jarang tetapi kami menemukan bahwa prevalensi komorbiditas psikiatri tinggi dan sebanding dengan prevalensinya di negara industri maju.

Sebagian besar dari jurnal ilmiah yang dipublikasikan dalam dua tahun terakhir terfokus pada komorbiditas fisik, perilaku berisiko, dan kebijakan kesehatan. Penelitian di Asia dan Afrika mengenai masalah psikiatri pada penasun perlu ditingkatkan dan menggunakan metodologi yang optimal seperti jumlah sampel yang cukup besar, penggunaan kuesioner tervalidasi, dan metode penegakan diagnosis yang terstandar. Akhirnya, intervensi berbasis bukti dalam penanganan komorbiditas psikiatri pada penasun sangat terbatas dan perlu diteliti secara lebih mendalam.

Harapan keluarga pada masa depan pasien HIV masih tinggi walaupun mereka mempersepsikan lebih banyak kekhawatiran terhadap kerabat mereka yang sakit tersebut

Keterlibatan dan dukungan dari keluarga sangat berhubungan dengan penyesuaian fisik dan psikologis yang lebih baik pada orang dengan HIV/AIDS (ODHA)^{40, 41}. Keinginan untuk mengakses terapi narkoba pada penasun juga dipengaruhi oleh keluarga mereka⁴². Karakteristik yang sangat menentukan keterlibatan keluarga adalah kepuasan pada perawatan yang diberikan oleh pemberi layanan kesehatan, persepsi terhadap masalah, dan kepercayaan bahwa masalah dapat diubah⁴³.

Pada bab 7 kami mengeksplorasi kepuasan dalam menerima perawatan dari penyedia layanan kesehatan, masalah-masalah yang dipersepsikan, dan harapan dari keluarga pada pasien HIV yang sedang mendapatkan perawatan dengan atau tanpa riwayat menggunakan narkoba suntik dibandingkan dengan pasien yang sedang mendapatkan terapi tuberkulosis. Anggota keluarga (n = 123) direkrut dengan metode purposive sampling: 36 anggota keluarga penasun yang terinfeksi HIV; 43 anggota keluarga pasien HIV tanpa riwayat penggunaan jarum suntik; dan 44 anggota keluarga pasien dengan tuberkulosis. Dibandingkan dengan anggota keluarga pasien tuberkulosis, keluarga pasien HIV lebih puas terhadap layanan yang diberikan oleh petugas kesehatan khususnya mengenai informasi yang diberikan. Anggota keluarga dari penasun yang terinfeksi HIV mempersepsikan lebih banyak masalah pada keluarga mereka yang sakit dibandingkan dengan dua kelompok lainnya. Masalah tersebut berhubungan dengan pengaruh berbahaya dari merokok/ minum alkohol/ menggunakan narkoba terhadap keluarga mereka yang sakit dan juga efeknya pada keluarga. Integrasi program terapi narkoba dan HIV telah terbukti lebih efektif dan dapat menghilangkan stres yang dialami oleh pasien dan anggota keluarga mereka^{34, 35, 44}. Sebagai tambahan, intervensi berbasis keluarga dapat mendukung keluarga untuk mengembangkan keterampilan untuk menghadapi masalah dan bukan menghindarinya^{45, 46}.

Kami menemukan bahwa harapan terhadap masa depan dari keluarga mereka yang sedang sakit secara umum tinggi dan sebanding dalam tiga kelompok tersebut. Semua pasien yang terinfeksi HIV diterapi dengan ART dan beberapa dari mereka berpartisipasi dalam PTRM. Efektivitas dari kedua program terapi tersebut telah dikenal dengan baik^{6, 47, 48}. Sebagai kesimpulan, anggota keluarga dari penasun yang terinfeksi HIV mengalami banyak masalah dan perhatian dari petugas kesehatan terhadap hal ini dapat memperkuat keterlibatan dan dukungan keluarga bagi anggota keluarganya yang sedang sakit.

Kekuatan dan keterbatasan dari penelitian

Penelitian ini dilakukan sebagai bagian dari program IMPACT (Integrated Management of Prevention And Control and Treatment of HIV/AIDS) yang menggunakan pendekatan

multidisipliner. Hasil-hasil dari penelitian saat ini digabungkan dengan hasil-hasil dari peneliti-peneliti lain di IMPACT akan memberikan gambaran komprehensif tentang status pencegahan, kontrol, dan terapi HIV di kalangan penasun di Jawa Barat, Indonesia. Karakteristik sosio-demografik penasun di penelitian kami sebanding dengan penelitian lain dari Indonesia^{44, 49-56}. Hal ini mengindikasikan bahwa sampel kami mewakili populasi yang ada.

Penelitian-penelitian kami memiliki beberapa keterbatasan yang penting. Pertama, tidak ada ulasan sistematis atau meta-analisis yang digunakan dalam artikel ini. Kedua, penasun dan keluarganya seringkali sulit untuk dijangkau, membawa pertanyaan seberapa mewakilikah sampel yang ada. Respondent driven sample digunakan (bab 3 dan bab 4) untuk meminimalkan risiko tersebut^{57, 58}. Walaupun demikian, beberapa penasun yang tidak berada dalam jejaring sosial dengan partisipan ini dapat tidak terikutsertakan melalui respondent driven sampling⁵⁹. Di PTRM (bab 5), data didapatkan dari 60% dari populasi dan tidak semua pasien yang berpartisipasi melengkapi semua wawancara dan pemeriksaan secara lengkap. Pada bab 7, purposive sampling digunakan di satu klinik di daerah urban dengan jumlah sampel yang agak kecil. Ketiga, generalisasi hasil penelitian untuk kondisi Indonesia secara umum harus dipertimbangkan secara hati-hati, karena fasilitas terapi narkoba pada umumnya hanya terbatas di kota-kota besar. Pada tahun 2010, hanya terdapat 49 tempat substitusi opioid yang terdapat di Indonesia⁶⁰, sementara estimasi penasun pada tahun yang sama adalah lebih dari 219,000 orang⁶¹. Keempat, seluruh penelitian yang dilakukan adalah penelitian potong lintang. Dengan metode ini tidak dimungkinkan untuk menemukan hubungan sebab akibat.

Rekomendasi

Berdasarkan hasil-hasil penelitian yang dideskripsikan dalam tesis ini dan dengan mempertimbangkan kekuatan dan keterbatasan, kami ingin memberikan beberapa rekomendasi ke pengambil kebijakan, klinisi, pakar pendidikan, dan rekomendasi untuk penelitian di masa yang akan datang.

Pengambil kebijakan

Perluas cakupan terapi substitusi opioid menjadi terapi adiksi

Seperti telah menjadi kasus di berbagai negara, adalah epidemi HIV yang pada awalnya menarik perhatian untuk merubah perilaku penggunaan narkoba di Indonesia⁶². Laporan baru-baru ini secara nasional menunjukkan bahwa pola transmisi HIV di Indonesia telah berubah dari penggunaan jarum suntik ke arah transmisi heteroseksual dan penularan ibu ke anak. Tahun 2006, 52% of dari pasien HIV mendapatkan HIV akibat penggunaan jarum suntik yang tidak steril sementara angka ini menurun menjadi 16% di 2011. Walaupun demikian terdapat pertanyaan bagaimana mantan penasun dengan perilaku seksual berisiko dikategorikan dalam laporan tahun 2011.

Perkembangan yang sangat positif adalah bahwa estimasi penasun di Indonesia juga menurun: di tahun 2006, jumlah penasun yang dilaporkan adalah 219.000 sedangkan pada tahun 2009, 106.000 orang⁶³. Pengurangan program yang diberikan untuk penasun oleh lembaga swadaya masyarakat (LSM) akan memiliki konsekuensi dalam meningkatkan kembali kontribusi penasun dalam transmisi HIV.

Berkebalikan dengan jumlah penasun, jumlah pengguna narkoba di Indonesia meningkat dari 2.2 persen (4 juta) di 2010 menjadi 2.8 persen (5 juta)⁶⁴. Kontradiksi yang tampak ini dapat dijelaskan dengan adanya perubahan rute administrasi narkoba yang paling sering digunakan: pada umumnya dari penggunaan narkoba suntik ke narkoba non suntik tetapi dapat juga sebaliknya^{2,3}. Sebagai tambahan, tipe narkoba juga akan mempengaruhi rute administrasi dan/ atau perilaku seksual berisiko.

Di bab 2, telah ditunjukkan bahwa baik penasun aktif maupun mantan penasun tidak ada yang berhenti menggunakan narkoba. Penggunaan stimulan tipe amfetamin (STA) meningkat di Asia dalam beberapa tahun terakhir^{36, 65-67} dan penggunaan STA, heroin, atau alkohol tentu saja berhubungan dengan perilaku menyuntik dan seksual berisiko⁶⁵⁻⁷⁰. Perilaku seksual berisiko dapat menjadi jembatan hubungan antara penasun dengan komunitas umum. Banyak penelitian menunjukkan bahwa prevalensi gangguan psikiatri dan penggunaan narkoba pada orang-orang yang melakukan perilaku seksual berisiko tinggi dan penggunaan obat-obat peningkat suasana perasaan seperti SSRI dapat menurunkan perilaku seksual berisiko⁷¹. Adalah suatu hal yang penting untuk memberi perawatan pada pasien-pasien ini, tidak hanya karena masalah-masalah mereka tetapi juga karena mereka mungkin memegang peranan kunci dalam penyebaran HIV. Peraturan baru dari pemerintah Indonesia di tahun 2011 (Peraturan Pemerintah no 25 tahun 2011) menyatakan bahwa pengguna narkoba atau keluarganya harus datang ke fasilitas terapi tertentu yang telah ditunjuk pemerintah. Peraturan ini dapat dilihat sebagai peluang untuk memberikan terapi narkoba tetapi juga membuka kesempatan untuk memberikan program terapi lainnya secara simultan.

Menyediakan terapi komprehensif untuk komorbiditas yang kompleks

Sebagian besar dari penasun menderita gangguan fisik, psikiatrik, dan penggunaan narkoba di saat yang bersamaan. Prevalensi HIV dan HCV di kalangan penasun di Indonesia (bab 2 dan 4) adalah termasuk yang tertinggi dibandingkan dengan negara-negara lainnya^{49, 72-75}. Masalah gangguan psikiatri saat ini dan seumur hidup dan gejala-gejalanya tinggi dan sebanding dengan penelitian-penelitian lainnya^{21, 72, 76-79}.

Sebagian besar penasun di Indonesia menggunakan heroin tetapi pola penggunaan narkoba multipel adalah umum, khususnya pengkombinasian dengan benzodiazepin. Hal ini sejalan dengan penelitian lainnya^{32, 80-83}. Cakupan menyeluruh dari program intervensi masih rendah⁸⁴ dan rujukan dengan perawatan untuk permasalahan komorbiditas masih sangat terbatas, walaupun rujukan tersebut akan meningkatkan efektivitas dan penggunaan layanan⁶.

Oleh karena itu, tantangan utama adalah untuk membangun kerja sama dan jejaring yang akan memungkinkan pengumpulan sumber daya dan kolaborasi antara penyedia layanan dan/atau tenaga kesehatan. Sebagai contoh, saat ini layanan untuk HIV/AIDS, terapi narkoba, dan terapi psikiatri diberikan oleh tenaga kesehatan yang berbeda di fasilitas yang berbeda. Penyediaan layanan yang komprehensif dan terintegrasi di pusat terapi khusus dapat meningkatkan efektivitas secara nyata karena penasun seringkali tidak patuh pada saran rujukan⁸⁵. Beberapa pendekatan dapat dilakukan, seperti pelatihan staf sehingga mereka dapat menghadapi berbagai masalah. Jika masalah yang lebih rumit ditemukan, dapat dikonsultasikan dengan ahli yang mengunjungi fasilitas secara rutin. Kolaborasi dan kesepakatan dengan

beberapa penyedia layanan, diskusi kasus dengan berbagai ahli di berbagai bidang dan di berbagai pendekatan akan menambah dan memaksimalkan efektivitas dari program tim multidisiplin yang komprehensif.

Membawa layanan ke tingkat komunitas

Sebagian besar pembiayaan untuk program narkoba dan adiksi di Indonesia berasal dari pendanaan eksternal⁸⁶. Agar program yang ada dapat berkesinambungan maka program yang pembiayaannya efektif (*cost-effective*) diperlukan. Salah satunya adalah dengan membawa layanan ke tingkat komunitas. Penambahan jumlah klinik komunitas untuk tes dan konsultasi sukarela HIV akan meningkatkan akses, memungkinkan deteksi dan terapi dini. Akses untuk penasun juga perlu ditingkatkan karena sebagian besar penasun yang datang ke tempat terapi (bab 5) dan ke klinik HIV di Bandung⁸⁷ cenderung datang pada kondisi penyakit yang sudah lanjut.

Membawa layanan ke tingkat komunitas dapat menurunkan beban dari klinik di rumah sakit sehingga dapat berorientasi lebih ke arah terapi pasien AIDS⁸⁸. Saat ini, prevalensi HIV di komunitas umum masih sangat rendah dan karenanya kami menyarankan untuk membatasi pelayanan HIV pada rumah sakit, puskesmas, dan klinik dengan petugas kesehatan dengan spesialisasi yang telah terakreditasi. Namun, sebaliknya, prevalensi penggunaan narkoba legal dan ilegal di populasi umum cukup tinggi. Oleh karena itu, di tahun 2011, presiden memberikan instruksi untuk meningkatkan upaya pencegahan, terapi, dan rehabilitasi untuk penasun⁸⁹. Proses penapisan penggunaan narkoba yang diimplementasikan secara terintegrasi dengan pelayanan kesehatan di puskesmas sehari-hari akan mengarah pada deteksi dan intervensi secara dini. Hal ini dapat mencegah pengguna narkoba sewaktu-waktu menjadi pengguna rutin (adiksi).

Meningkatkan keterlibatan keluarga dan lembaga swadaya masyarakat dan organisasi keagamaan dalam program terapi

Indonesia, seperti halnya negara Asia lainnya merupakan komunitas yang kolektivistis. Orang-orang terintegrasi dari saat lahir menjadi suatu kelompok yang kohesif dan kuat kadangkala bahkan dengan keluarga jauh⁹⁰. Keterlibatan dan dukungan dari keluarga sangat berhubungan erat dengan penyesuaian fisik dan psikologis pada orang dengan HIV^{40, 41}. Lebih lanjut, layanan perawatan kesehatan yang ada saat ini tampak terpisah-pisah dan kekurangan keberlanjutan perawatan bagi penasun. Petugas kesehatan ditantang untuk memperkuat peranan dari pemberi perawatan dari keluarga dan layanan komunitas lainnya untuk berkerja secara bersama-sama dalam aktivitas perawatan dan pencegahan HIV. Penyebarluasan pengetahuan dan pelatihan melalui dialog interaktif adalah elemen kunci untuk mengembangkan model efektif perawatan kesehatan berbasis masyarakat untuk orang dengan HIV⁹¹.

Selanjutnya, sebagian besar orang di Indonesia adalah beragama⁹². Kepercayaan dan latihan yang berhubungan dengan religi/ spiritualitas secara umum berhubungan positif dengan kenyamanan, harapan, rasa optimis, tujuan dan makna, adaptasi, kemampuan mengatasi duka, dan dukungan sosial yang lebih baik⁹³. Banyak keluarga membawa kerabatnya yang mengalami masalah narkoba atau moral ke fasilitas terapi spiritual/ kepercayaan tradisional. Pemimpin spiritual/ orang yang memberikan terapi spiritual/ kepercayaan mungkin kurang mendapat informasi mengenai masalah medis seperti infeksi yang menular melalui darah

seperti HIV dan hepatitis B/C. Komunikasi dan pelatihan bagi penyedia layanan terapi spiritual/ kepercayaan tradisional dapat meningkatkan akses ke layanan HIV. Sebagai tambahan, organisasi berbasis kepercayaan dapat berkontribusi dalam perawatan harian pasien HIV. Organisasi berbasis kepercayaan merupakan suatu tipe lembaga swadaya masyarakat yang pada dasarnya bekerja atas dasar misi keagamaan. Di Indonesia, organisasi berbasis kepercayaan, biasanya memiliki sejumlah besar pengikut dan/ atau anggota yang mampu untuk menyebarkan pengetahuan ke seluruh negara⁹¹, maka mempengaruhi mereka untuk mempromosikan tes dan terapi HIV akan dapat memiliki efek yang besar.

Destigmatisasi penasun dan orang dengan HIV

Penasun dan orang dengan HIV seringkali distigmatisasi karena mereka dihubungkan dengan perilaku immoral^{45, 94}. Stigma dan diskriminasi merupakan fenomena yang umum tidak hanya pada tingkat individu, tetapi juga di tingkat institusi dan keluarga^{95, 96}. Stigma dan diskriminasi merupakan sumber stres tambahan dari stres yang sudah ada akibat penyakit itu sendiri⁴⁵. Stigmatisasi yang tinggi mengarah pada pencarian pertolongan yang lebih rendah dan menjadi hambatan untuk terapi⁹⁷. Program televisi dan iklan ditonton oleh sebagian besar masyarakat di Indonesia dan dapat dijadikan alat untuk menyebarkan informasi^{98, 99}. Hal tersebut dapat digunakan untuk meningkatkan pengetahuan masyarakat umum mengenai adiksi dan HIV dan bagaimana menangani masalah tersebut sehingga stigmatisasi dapat diturunkan dan akses ke pelayanan kesehatan dapat ditingkatkan.

Penggunaan variabel yang sama dalam surveilans untuk mengevaluasi program pengurangan dampak buruk

Ulasan baru-baru ini menyimpulkan bahwa cakupan program pengurangan dampak buruk terbatas dengan estimasi data tentang jumlah populasi penasun yang inkonsisten dan tidak sempurna⁸⁴. Sebagai contoh, istilah ‘penasun’ cenderung digunakan tanpa definisi yang memadai, tanpa menjelaskan secara spesifik penggunaan narkoba sekarang atau dahulu, frekuensi, lama penggunaan, jenis narkoba yang disuntikan, konteks (misalnya di penjara), dan seringkali tanpa informasi mengenai masalah fisik, psikiatrik, dan psikososial, dll.

Kebingungan juga terjadi pada istilah “cakupan terapi substitusi opioid”. Seringkali tidak jelas apakah terapi metadon atau buprenorfin, atau keduanya, yang dievaluasi. Apakah terapi HIV diberikan pada mereka yang memerlukannya? Karakterisasi dari populasi penelitian juga tidak selalu jelas; apakah yang diikuti sertakan dalam penelitian tersebut adalah mereka yang sedang dalam perawatan atau mereka yang pernah mengikuti program terapi. Standar-disasi istilah, kondisi, dan kurun waktu merupakan persyaratan untuk melakukan evaluasi program intervensi yang sepatutnya.

Klinisi

Komorbiditas fisik

Penasun dapat menderita berbagai gangguan fisik pada saat yang bersamaan termasuk infeksi yang menular melalui darah seperti HIV dan hepatitis B/C, abses pada kulit, sepsis dengan atau tanpa endokarditis, keracunan obat akibat interaksi berbagai macam obat atau polifarmasi, dll¹⁸. Jika diresepkan secara seharusnya dan dengan kepatuhan yang optimal, terapi antiretroviral telah terbukti meningkatkan secara dramatis prognosis dari infeksi HIV dan komorbiditas lainnya, termasuk tuberkulosis, hepatitis virus, penyakit ginjal dan

kardiovaskular¹⁸.

Walaupun demikian, banyak klinisi Indonesia yang masih menolak untuk meresepkan terapi HIV pada penasun. Beberapa diantara mereka mengatakan pada pasien bahwa terapi adiksi perlu dihentikan sebelum terapi antiretroviral dapat dimulai. Manajemen klinis berkesinambungan terhadap berbagai komorbiditas yang terjadi pada penasun yang terinfeksi HIV dapat mengakibatkan interaksi farmakokinetik obat yang harus diperhatikan secara adekuat. Lebih lanjut, intervensi untuk meningkatkan kepatuhan terapi dengan memperhatikan masalah psikiatri, penggunaan narkoba, dan dukungan sosial diperlukan¹⁸.

Komorbiditas psikiatri

Penilaian dan pengobatan harus dilakukan secara hati-hati karena masalah psikiatri dapat terjadi secara independen atau sebagai hasil dari HIV, HCV, penggunaan narkoba, dan komorbiditas lainnya dan pengobatannya. Intervensi untuk meningkatkan rujukan dan menerima rujukan dari/ ke terapi jiwa dibutuhkan. Penggunaan terapi psikiatri masih rendah dibandingkan dengan kebutuhannya, khususnya akibat stigmatisasi pada orang dengan gangguan psikiatri^{100, 101}.

Komorbiditas yang berkaitan dengan penggunaan narkoba

Beberapa faktor psikiatris dapat meningkatkan kerentanan seseorang untuk menjadi pengguna narkoba. Yang paling sering ditemukan adalah kepribadian turunan²⁶, impulsivitas, pencarian sensasi, sesuatu yang baru, sensitif terhadap penghargaan²⁵, kepribadian antisosial²⁷, dan trauma masa anak-anak²⁸.

Faktor-faktor psikiatris mempengaruhi hasil dari terapi dan jarang diperhatikan dalam program terapi narkoba²⁵. Penggunaan narkoba, khususnya penggunaan narkoba multipel meningkatkan kerentanan untuk menderita gangguan psikiatri^{23, 29}. Disamping terapi substitusi yang telah terbukti efektivitasnya^{49, 102, 103}, dukungan psikososial harus dipertimbangkan. Disebabkan oleh adanya gangguan sosial, emosional dan kognitif jangka panjang disertai dengan penggunaan narkoba, efek-efek ini bermakna dan sebanding dengan gangguan lainnya yang banyak ditemukan di psikiatri¹⁰⁴.

Menggunakan pendekatan biopsikososial untuk mendukung pasien

Model biopsikososial tidak hanya menekankan pada kebutuhan untuk menghormati keadaan dan pandangan pasien yang unik, tetapi juga mendukung pandangan bahwa setiap individu adalah agen yang penuh kekuatan untuk penentuan arah dirinya. Daripada memiliki pandangan bahwa hasil tiap individu adalah sebagian besar merupakan hasil dari determinan eksternal, model biopsikososial menghargai peranan nyata yang dimainkan dari kualitas setiap kelenturan individu dan agen personal. Sebagai model pelayanan yang terbaik, biopsikososial mengakomodasi dan mendukung teori sistem non-linear yang menempatkan individu dan tingkah laku dalam konteks sistem biologi, keluarga, dan sosio-kultural, dan yang memandang individu sebagai peserta aktif dalam sistem rumatan berkelanjutan dan dalam perubahan yang dinamik (105). Penatalaksanaan penyakit kronis seperti adiksi dan HIV juga memerlukan peranan aktif pasien dalam pengambilan keputusan, pemecahan masalah, dan implementasi dari rencana terapi personal untuk mencapai kondisi sehat yang lebih baik¹⁰⁶.

Pendidikan dan pelatihan

Kedokteran adiksi untuk praktisi adiksi

Di Indonesia, kedokteran adiksi belum dikenal sebagai (sub) spesialisasi medis dan tidak ada kurikulum kedokteran adiksi maupun pelatihan kedokteran adiksi yang tersedia. Saat ini, terdapat sekitar 200 profesional yang bekerja di perawatan adiksi, diantaranya, sesuai dengan penelitian terakhir, sekitar 17% belum pernah menerima pelatihan adiksi. Sebagian besar dari profesional pemberi layanan adiksi hanya mendapatkan pelatihan singkat mengenai terapi substitusi opioid, berupa pelatihan beberapa hari tentang peresepan dan pemberian metadon dan buprenorphin.

Hanya 30% profesional adiksi di Indonesia yang menganggap adiksi sebagai penyakit otak, sedangkan sekitar 70% menganggap terapi berbasis kepercayaan/ agama sebagai modalitas terapi yang paling sesuai¹⁰⁷. Kurangnya pengetahuan yang sesuai diantara profesional yang berkerja dengan penasun yang terinfeksi HIV, disertai dengan stigmatisasi, mempengaruhi perilaku mereka dalam pemberian layanan bagi pasien dan membatasi tingkatan kualitas intervensi medis dan psikiatris dalam kelompok ini⁹¹. Oleh karena itu, modul pelatihan untuk tenaga kesehatan khusus perlu untuk dikembangkan dan diberikan. Modul ini seharusnya tidak hanya memasukan tentang kedokteran adiksi tetapi juga infeksi yang ditularkan melalui darah sebagai tujuan pengajaran. Sertifikasi khusus dari kementerian kesehatan harus didapatkan untuk dapat bekerja di terapi adiksi. Setiap institusi yang telah ditunjuk oleh kementerian kesehatan sebagai pusat terapi harus memperkerjakan seorang dokter yang memiliki sertifikat tersebut.

Kedokteran adiksi sebagai kurikulum di fakultas kedokteran

Topik mengenai adiksi dan HIV seharusnya dimasukkan ke dalam kurikulum di fakultas kedokteran. Kurikulum tersebut seharusnya mencakup aspek psikologis, tingkah laku, dan imunologis dari kondisi ini. Pelatihan ini tidak hanya memberikan pengetahuan dasar yang dibutuhkan untuk mengerti adiksi dan HIV tetapi juga akan mengurangi stigma dan memberikan ide tentang pendekatan yang terintegrasi dan komprehensif untuk menghadapi masalah medis.

Kedokteran adiksi sebagai kurikulum di sekolah dasar dan menengah

Penggunaan narkoba di Indonesia dimulai pada usia yang sangat muda (14 tahun) dibandingkan dengan negara lain seperti Australia, Canada, Cina, Iran, Israel, Belanda, Polandia, Thailand, dan Amerika Serikat^{20, 21, 23, 49, 74}. Oleh karena itu, pendidikan untuk mencegah penggunaan NAPZA seharusnya diberikan di sekolah dasar dan menengah.

Di Indonesia, masalah seks dan penggunaan narkoba seringkali dianggap sebagai sesuatu yang sensitif dan pendidikan mengenai keterampilan hidup mulai dilakukan satu dekade yang lalu untuk mencegah hubungan seksual dan tingkah laku berisiko yang berhubungan dengan penggunaan narkoba yang diberikan dengan cara yang dapat diterima oleh budaya setempat. Keterampilan hidup didefinisikan sebagai keterampilan seseorang untuk melakukan perilaku yang adaptif dan positif untuk menghadapi kebutuhan dan tantangan sehari-hari dengan cara yang efektif. Tujuan dari pendidikan keterampilan hidup adalah untuk memperkuat kemampuan yang membantu meningkatkan kesehatan mental dan keterampilan orang muda saat mereka menghadapi realita kehidupan¹⁰⁸.

Informasi mengenai adiksi dan kesehatan reproduksi harus diberikan dengan cara yang sesuai untuk meningkatkan kewaspadaan dan pengertian para murid tetapi tidak untuk meningkatkan keingintahuan mereka untuk mencoba narkoba dan hubungan seksual.

Rekomendasi untuk penelitian di masa yang akan datang

Hasil penelitian dalam tesis ini menjawab hanya sebagian kecil dari masalah kompleks pada penasun yang berhubungan dengan penyebaran HIV. Informasi lebih lanjut tentang estimasi jumlah penasun diperlukan untuk penyesuaian penyediaan tempat terapi. Surveilans menggunakan kriteria variabel yang sama untuk memahami permasalahan dan untuk mengevaluasi intervensi yang dilakukan saat ini diperlukan untuk dilakukan secara rutin sehingga program intervensi dapat disesuaikan dengan situasi terbaru. Penelitian lebih lanjut mengenai faktor-faktor yang berhubungan dengan perilaku berisiko, seperti penggunaan narkoba, komorbiditas psikiatri pada kelompok berisiko untuk penularan HIV (penjaja seks komersial dan laki-laki yang suka pada laki-laki) juga sangat penting dilakukan untuk mengembangkan program intervensi yang lebih sesuai untuk mencegah penularan HIV lebih lanjut. Banyaknya komorbiditas pada penasun (bab 2, 4, 5) mengindikasikan kebutuhan untuk mengeksplorasi berbagai komorbiditas pada pasien HIV.

Semua penelitian dalam tesis ini adalah penelitian potong lintang yang penting untuk menilai permasalahan dan memahami karakteristik dari populasi target. Tahap berikutnya adalah untuk menterjemahkannya ke dalam bentuk tindakan nyata, sebagai contoh dengan memperbaiki dan mengembangkan program-program intervensi. Di bawah ini adalah beberapa penelitian aksi (action researches) yang perlu diutamakan.

Kurangnya informasi dan pelayanan adalah terutama mengenai gangguan psikiatri dan terasinya (bab 4, 5, dan 6). Percobaan acak terkontrol (randomized control trial) untuk menemukan intervensi psikiatri yang efektif (terapi kognitif dan perilaku (cognitive behavioural therapy (CBT)), obat psikotropika, atau kombinasi CBT dan obat psikotropika) untuk pasien HIV dengan atau tanpa riwayat penggunaan narkoba suntik dapat menggunakan berbagai parameter seperti kepatuhan minum ARV, respon imunologis, penggunaan narkoba, perilaku berisiko, dan kualitas hidup.

Prevalensi gangguan fisik, psikiatri, dan penggunaan narkoba lainnya pada penasun tinggi (bab 2, 3, 4, 5, 6) dan akses ke pelayanan masih terbatas. Penelitian kohort untuk membandingkan pelayanan yang berbasis komunitas dan berbasis rumah sakit diperlukan untuk menemukan pendekatan yang paling efektif. Data dasar dan data follow-up untuk mengukur derajat keparahan gangguan fisik, gangguan psikiatri, penggunaan narkoba, kualitas hidup, parameter laboratorium (Hb, CD4), kepatuhan terhadap rujukan, dan kepatuhan terhadap pengobatan dapat digunakan sebagai faktor penentu.

Terapi berbasis kepercayaan dan pengobatan tradisional serta dukungan sosial di masyarakat Indonesia adalah kekuatan pada masyarakat Indonesia yang belum cukup dilibatkan dalam program penanganan adiksi dan HIV (bab 4 dan 7). Informasi mengenai penyebaran HIV, metode pencegahan infeksi HIV, faktor yang dapat meningkatkan kerentanan seseorang untuk menggunakan narkoba, dan terapi adiksi diberikan pada pemuka agama dan staf-stafnya yang pada gilirannya dapat memberikan edukasi pada komunitas mereka melalui

kunjungan rumah dan pertemuan keagamaan. Pengetahuan, sikap, dan perilaku mengenai HIV dan adiksi narkoba dari pemuka agama sebelum dan setelah pelatihan dapat digunakan sebagai parameter penilaian langsung. Perbandingan akses terhadap terapi HIV dan narkoba, perilaku berisiko, dan prevalensi HIV di komunitas antara data dasar dan data follow-up yang dilakukan beberapa tahun setelah intervensi dapat menentukan kesuksesan program intervensi tersebut.

Perubahan dari penggunaan narkoba suntik ke non suntik adalah sesuatu yang sering terjadi sehingga proporsi penasun non-aktif (*former injecting drug users*) di kalangan penasun cukup bermakna (bab 3). Derajat keparahan penggunaan narkoba dipengaruhi oleh banyak faktor (bab 2 dan 6). Oleh karena itu, pemilihan terapi adiksi yang sesuai dan memberikan manfaat untuk pasien dan juga baik dilihat dari sudut pandang kesehatan masyarakat merupakan sesuatu hal yang sangat penting. Terapi metadon sebaiknya hanya diberikan pada mereka yang membutuhkan sehingga tidak menimbulkan dampak buruk. Pengetahuan dan keterampilan yang baik pada petugas medis yang bekerja di bidang adiksi dapat menurunkan pemberian terapi adiksi yang kurang tepat. Tingkat pengetahuan dan ketrampilan dalam menghadapi pasien adiksi sebelum dan setelah pelatihan dapat digunakan untuk menentukan program terapi adiksi yang paling efektif.

Penelitian-penelitian di atas dapat dilakukan dengan cara yang komprehensif. Sebuah proyek seperti IMPACT memberikan kesempatan untuk untuk mempelajari masalah dari berbagai sudut pandang, di berbagai tempat, dan melibatkan tenaga ahli dari berbagai bidang ilmu. Hasil yang didapatkan dari penelitian-penelitian tersebut dapat digunakan sebagai latar belakang penelitian lainnya. Dengan bekerja sama, pemahaman komprehensif terhadap suatu permasalahan dapat dirumuskan. Proyek seperti ini juga memfasilitasi seluruh orang yang terlibat dengan memberikan lingkungan yang positif dan aman untuk belajar (kami belajar dari kegagalan dan juga kesuksesan) dan membuka sesuatu hal yang baru dengan ide-ide baru. Pendekatan organisasi pembelajaran, menekankan pada tujuan umum, menerapkan pembelajaran multi-disiplin, intervensi berbasis bukti, dan memperkuat kapasitas individu dan organisasi telah terbukti berhasil¹⁰⁹. Walaupun demikian, menerapkan pendekatan ini juga memiliki berbagai kendala. Pemahaman mengenai perbedaan kultur dan manajemen organisasi merupakan kunci kesuksesan program di masa yang akan datang.

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About the author

Shelly Iskandar was born on Saturday, 26 June 1976 in Bandung, Indonesia. She continued her secondary school to university degree in Bandung, Indonesia. She completed her secondary school at Saint Aloysius High School in 1994. She acquired her medical degree at Medical Faculty, Universitas Padjadjaran in 2000 and her her master of science at Institute of Technology Bandung in 2006. She finished her specialization in acupuncture at Medical Faculty, Maranatha University in 2009. She worked as a lecturer in Anatomy department from 2001 to 2009 and from 2009 until now she is a staff member at Psychiatric Department, Medical Faculty, Padjadjaran University/ Hasan Sadikin Hospital, Bandung, Indonesia. She was introduced to the drug addiction field in 2003 when she was sent by National Narcotic Board and Health Research Unit Padjadjaran University to join “Drug Surveillance & Social Research” in Melbourne, Australia for 3 months. After that, as the implementation of the theory, she conducted multi center research about drug use & policy among senior high school students in 6 cities in Indonesia, supported by National Narcotics Board. Since then, she joined Health Research Unit in Medical Faculty, Universitas Padjadjaran and started her carrier in research. She also involved as co-trainer and trainer in house training in some cities in Indonesia, in collaboration with IASTP (Indonesian Australian Specialized Training Program), National Narcotics Board, Health Department, Social Department, Padjadjaran University, and Hasan Sadikin Hospital. Since 2006, when the first methadone clinic opened in Bandung, she worked there as a general practitioner until now. Start from March 2007, she joins in project named IMPACT (Integrated Management for Prevention And Care & Treatment of HIV/AIDS). In line with this project, she also proceeds to continue her PhD in combination with a resident training program in psychiatric department. In her spare time, she loves to join health social services with Tzu Chi International Medical Association (TIMA) hope today I can make you proud of me.

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