

EVIDENCE OF HARM REDUCTION EFFECTIVENESS IN PREVENTING HIV SPREAD AMONG INJECTING DRUG USERS

BUKTI KEEFEKTIFAN PROGRAM HARM REDUCTION DALAM MENCEGAH PENYEBARAN HIV DI ANTARA PEMAKAI NARKOBA DENGAN JARUM SUNTIK

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ABSTRACT

Background: *Injecting drug user (IDU) is increasing dramatically almost in every part of the world. IDU is well known as one way to spread HIV. It is important to rapidly develop a strategy for reducing the transmission of HIV infection among and from IDUs in order to protect individuals, families and the community from injecting drug use and its associated harms. One possible way to restraint HIV transmissions is through harm reduction program.*

Method: *This is a literature review to analysis the effectiveness of harm reduction in preventing HIV spread among injecting drug users.*

Results: *The main point of harm reduction strategy is trying to minimize the harmful effects because of drug use for instance blood borne virus, overdose, medical complication from using drugs and also social consequences, without necessarily diminishing the amount of drug taking. The objective of harm reduction is to keep drug users to stay alive, healthy and productive until drug dependence treatment effectively working, or until they realise the negative impacts of consuming drugs then decided to stop using it. In practice, harm reduction uses a range of services to attain its goals such as needle syringe programs, drug replacement therapy, voluntary counselling and testing (VCT) and HIV Outreach Program and Education. Harm reduction approach has provided evidence of its effectiveness in reducing the risks behaviour of drug users from HIV infection. Moreover, the implementation of comprehensive harm reduction programs is urgently needed in countries that are facing HIV/AIDS problems.*

Conclusion: *Harm reduction seeks to minimise problems associated with drug use through methodologies that safeguard the dignity, humanity and human rights of people who use drugs. Harm reduction does not deny the value of helping people become drug free, or the desirability of abstinence as an eventual goal. It simply recognizes that for many drug users these are distant goals.*

Keywords: *harm reduction, HIV, injecting drug users, needle syringe program and VCT*

ABSTRAK

Latar Belakang: Jumlah pemakai narkoba suntik (penasun) senantiasa meningkat di hampir semua belahan dunia. Penasun merupakan salah satu faktor penyebab meningkatnya penyebaran virus HIV. Oleh karena itu, strategi untuk menanggulangi penyebaran virus HIV diantara penasun harus segera dikembangkan untuk meminimalkan penyebaran virus HIV dan dampak negative lainnya. Salah satu metode yang bisa dipakai untuk meminimalkan penyebaran virus HIV adalah dengan program harm reduction.

Metode: Metode yang dipakai dalam makalah ini adalah review dari literatur yang ada untuk menganalisa keefektifan program harm reduction untuk mencegah penyebaran virus HIV pada penasun.

Hasil: Intisari dari program harm reduction adalah untuk meminimalkan dampak negatif dari penggunaan obat-obatan terlarang melalui jarum suntik seperti penyakit yang menular melalui darah, overdosis, komplikasi medis karena menggunakan obat-obat terlarang dan dampak sosial lainnya tanpa harus menghentikan penggunaan obat secara seketika. Tujuan dari program harm reduction adalah menjaga agar penasun tetap bisa hidup sehat dan produktif sampai program ini dapat mengurangi ketergantungan penasun akan narkoba. Dalam prakteknya, ada beberapa strategi yang dipakai dalam program harm reduction yaitu needle syringe programs (NSP), drug replacement therapy, voluntary counselling and testing (VCT) and HIV Outreach Program and Education. Pendekatan harm reduction telah terbukti efektif mampu mengurangi perilaku beresiko para penasun sehingga mampu mencegah penyebaran virus HIV. Pelaksanaan program harm reduction secara menyeluruh sangat mendesak untuk dilaksanakan, terutama di Negara-negara yang menghadapi peliknya permasalahan HIV/AIDS.

Kesimpulan: Harm reduction bertujuan untuk meminimalkan permasalahan yang timbul karena penggunaan obat-obatan terlarang terutama pengguna narkoba suntik. Program ini aman untuk diterapkan dan tetap menjunjung harkat, martabat dan hak asasi para penasun.

Kata kunci: *harm reduction, HIV, penasun, needle syringe program and VCT.*

INTRODUCTION

Injecting drug use (IDU) is increasing dramatically almost in every part of the world. IDU is well known as one way to spread HIV. Illicit drug use contribute significantly to the morbidity and mortality because of the transmission of blood borne viruses (BBV), particularly HIV¹. The HIV epidemic is a new, complex phenomenon in the world today and has become a major public health concern.

It has been estimated that almost 16 million people from 148 countries (exception for many countries in Africa, the Middle East, and Latin America) who are injecting drug users (IDUs)². HIV transmission will rapidly arise where IDUs increase dramatically³. This is become driving force of the AIDS epidemic in some countries because of the use and sharing contaminated needles, equipment and other drug paraphernalia⁴.

Problem of drug use generally bears a series of health related harms, as well as economic, legal, and social harms for individual, the family and the community⁵. It is important to rapidly develop a strategy for reducing the transmission of HIV infection among and from IDUs in order to protect individuals, families and the community from injecting drug use and its associated harms. One possible way to restraint HIV transmissions is through harm reduction program. It has been suggest that HIV epidemics can be avoided when comprehensive HIV programmes targeting IDUs are pin up into place⁶.

This paper will briefly reviews about harm reduction strategy and its principle followed by reviews evidence available regarding effectiveness of harm reduction in preventing HIV spread among injecting drug users. This paper will also highlight some approaches that show promises several considerations for future research and action. Relevant information regarding harm reduction programs in preventing the spread of HIV among IDUs was obtained from the World Health Organization (WHO) and by conducting Cochrane and Medline searches using effectiveness of harm reduction, injecting drug users and HIV as keywords.

DISCUSSION

What is Harm Reduction?

In order to analyse the effectiveness of harm reduction actions, it is important to understand the theory and principles in harm reduction. Harm reduction is defined as :

*“a term that defines policies, programs, services and actions that work to reduce the health, social and economic harms to the individuals, community and society, that are associated with the use of drugs”.*⁷

The main point of harm reduction strategy is trying to minimize the harmful effects because of drug use for instance blood borne virus, overdose, medical complication from using drugs and also social consequences, without necessarily diminishing the amount of drug taking⁸.

The objective of harm reduction is to keep drug users to stay alive, healthy and productive until drug dependence treatment effectively working, or until they realise the negative impacts of consuming drugs then decided to stop using it. As in the case with drug use in general, injecting drug use frequently generates moralistic or judgmental attitudes and responses. Considering and treating drug users as a ‘species apart’ may strengthen a sense of moral superiority, but it is unproductive and indefensible^{9, 10}. Potentially, anyone could become an injecting drug user or find themselves, the parent, partner, child, sibling, colleague or friend of a user. Stigmatising and marginalising injecting drug users are likely to leave them alienated, fearful, and out of touch with the support and services they may most need¹¹.

There are several principles in harm reduction strategy: 1) short term pragmatic goals which mean that the most urgent needs will be addressed first especially short-term realistic goals which is based on knowledge and situation specific consideration. For instance the strategy to prevent HIV transmission needs to be initiated as soon as possible rather than long term abstinence or rehabilitation; 2) Hierarchy of risks mean including avoiding or stop using drug, moreover harm reduction also acknowledge

several people will choose to continue use drugs and provide information and educations programs on how to minimise the risk of blood borne viruses (BBV's infection); 3) Harm reduction involving alternative strategies which mean that it may only succeed when it combines with several complementary interventions. For instance harm reduction strategy in conjunction with comprehensive package for preventing HIV transmission from WHO; 4) Involvement of drug users within harm reduction programme for instance involving current or past drug users as an outreach staff or as peer educators in prevention of HIV^{8, 12, 13}.

Evidence of Harm Reduction

In practice, harm reduction uses a range of services to attain its goals. Needle syringe programs and drug replacement therapy are the two of the most effective interventions to reduce drug-related harm. Most of the evidence of harm reduction effectiveness in reducing HIV transmission covers in depth about opioid substitution therapy and needle syringe program. Other strategy in harm reduction such as voluntary counselling and testing (VCT) and outreach can be considered as ways in educating IDUs regarding their risky behaviour with the hope to change their risky behaviour and thus slow the rate of HIV infection. Evidence based on needle syringe program and substitution treatment, and briefly on voluntary counselling and testing (VCT), and outreach will be presented.

Needle and Syringe Program (NSP)

There is growing tendency among IDUs to share injecting equipment for many reasons. Some of the reasons are because of the difficulty in obtaining new safe equipment, lack of knowledge and awareness of risks, peer pressure and situational and circumstantial context for instance in prison⁴. Sharing or even reuse of non sterile syringes strongly associated with blood borne pathogen transmission including HIV. This is because, it will expand the risk of endocarditis, cellulitis, and abscesses¹⁵.

The aims of NSP are to distribute sterile injecting equipment to IDUs, to remove used injecting equipment from circulation, to provide comprehensive services included education and skill to protect against BBV, knowledge about cleaning injecting equipment, information about

drug treatment, protection through sexual transmission, outreach and referral to health care^{16, 17}. There is variation in literature regarding the name of this program. For the purpose of this paper, terminology of NSP, Needle Exchange Program (NEP), and Needle Syringe Exchange Program (NSEP) will be used interchangeably.

A large body of evidence supports the effectiveness of NSP in reducing widespread of HIV cases, especially among IDUs. The first NEP was initiated in Amsterdam in 1984. It has been found that NEP associated with a lot of positive health outcomes and in 1988 researcher publicized that NEP reduced the frequency of needle sharing and injection among IDUs¹⁵. From an ecological study conducted to compare changes over time in HIV seroprevalence worldwide between cities with and without NEPs found that on average the annual change in seroprevalence was 11% lower in cities with NEPs. Moreover in the cities without NEPs the seroprevalence rising by 5.9% yearly and in the cities with the programs, it reduced by 5.8% per year¹⁶. Another ecological study that support the evidence effectiveness of NSPs by Macdonald et al. (2003) cited in Kral and Bluthenthal (2003) found strong association between NSP and lower rate of HIV incidence and prevalence among IDUs in countries that implemented NSP. Within 99 cities internationally, HIV prevalence among IDUs diminished significantly in cities with NSP compare to cities without NSP¹⁸.

From the first international review of evidence conducted by Alex Wodak and Annie Cooney (2005) proposes that sterile needle and syringe programs could effectively, safely and cost effectively decrease HIV infection among IDUs. This review used The Bradford Hill criteria as evaluation framework¹⁹. It reviewed forty-five studies from 1989 to 2002, these studies provide strong evidence that NSP maintain protection to prevent HIV transmission. From 6 out of 10 studies found that NSP use is a protective factor, 23 out of 33 studies found that NSP reduce HIV risk behaviour such as sharing needle, borrowing or reuse while the rest of studies evaluate diverse outcomes¹⁹.

In addition, from financial point of view NSPs have produced a significant public health benefit. It can be seen from the study about return of investment of NSPs in Australia. Study found that between 1990 and 2000 nearly AU\$150

million has been invested for NSP. This investment increased the quantity of life years gained and quality of life gained since NSP could avoid at about 25,000 cases of HIV, approximately save of over 5,000 lives by 2010, and an estimated return of investment between AU\$2.4 and \$7.7 billion²⁰. Similar study in New Zealand also proved that NSEP is the most cost effective and efficient to prevent HIV spread among IDUs. New Zealand government has been invested NZ\$ 10 million on NSEP over 13 years (1988-2001), it has resulted about 1,031 cases of HIV can be avoided and since the introduction of this program sharing needle among IDUs declined from 50% in 1994 to 6% in 2002.²

However, the studies of effectiveness NSP in reducing the spread HIV mainly done in a main city of a country which is not best describe general population of IDUs in that country. Moreover, implementation of this program might be confounded by other HIV prevention programs such as the presence of pharmacies that can legally distribute needles and syringe¹⁶. It seems to decrease the effectiveness of NSP. There are also several obstacles that might affect the effectiveness of such program for instance political and cultural barriers, fiscal restraint that could affect the coverage and sustainability of the program. Despite all these limitations, in the absence of an effective vaccine against HIV, improving access to sterile needles and syringes will remain the most effective strategy to reduce HIV transmission among and from IDUs.

Drug Substitution Treatment

Drug substitution treatment can be defined as treatment to substitute the illicit drug with medically prescribed medication that has longer effects, thus post phoning the withdrawal symptoms, decreasing the frequency of administering drugs and stabilising drug users' physiologically and psychologically. The provision of treatment potentially allows users to maintain their life in order to reduce negative behaviour as well as criminal behaviour.²²

Of the range of substances used in substitution treatment methadone and buprenorphine is one of the finest agonist pharmacotherapy evaluated for HIV risk reduction strategies among IDUs. However, methadone is the most widely used and rigorously evaluated of all substitution

approaches. From a review of research literature, Gibson et.al suggested that there is substantial evidence that methadone maintenance treatment (MMT) is effective in preventing HIV disease among IDU. From reviewed of 38 studies, 34 contained evidence that methadone maintenance decrease HIV risk behaviour and/or HIV sero--conversion²³. The findings of Sorensen and Copeland (2000) also provide supported evidence that those who join MMT were less likely to get HIV infection. This is because MMT lead to reduce injecting drugs and needle and syringe sharing therefore will protect treatment recipients from HIV/AIDS and diminish HIV risk behaviours.²²

In recent comprehensive review of evidence by Cochrane (2008) also found that oral substitution therapy for IDUs is related in reducing proportion of IDUs to use illicit drugs and injecting use. Moreover, number of sharing needles and other injecting equipment and paraphernalia amongst IDUS are also reduce significantly after entering the treatment. It also reported that MMT reduce multiple sex partners or exchange of sex for drugs and money. However, substitution treatment has small effect on condoms use. This evidence shows that reduction in risk behaviour related to drug use has positive effect on actual reductions of HIV transmission among IDUs who receive oral substitution treatment.²⁴ In addition, from economic perspective, a study about cost effectiveness methadone maintenance and HIV transmission found that expansion of methadone maintenance is cost effective intervention which can produce significant health benefits for society and could increase quality adjusted life years gained of general population.²⁵

In spite of such evidence supporting the effectiveness of drug substitution treatment in preventing HIV spread among IDUs, there are gap among those review regarding patterns of treatment and doses response relationship. It has been suggest that patterns of treatment and doses given play important role in methadone treatment. Hartel and Schoenbaum argued that higher dose and continuous stay in methadone treatment reveals strong protective correlation against HIV infection.²⁶ Moreover, The US National Institute of Health concluded that the effectiveness of MMT is depending on adequate medication dosage, length and continuity of treatment and accompanying psychosocial services.²⁷

The lack of data from randomised controlled studies limits the strength of the evidence provided by those reviews. Issue of selection bias may also influence the evidence, scientists may argue that IDUs join the treatment by nature. However, there is no strong support available for such argument.²⁸

There are also some barriers in MMT that might affect the effectiveness of treatment. Methadone is kind of morphine-type analgesic, symptom like respiratory depression, insomnia, sweating, painful joint and bones could influence willingness of IDUs to join the treatment.²⁷ Additionally, stigma and bias directed at MMT and recipient may delay expansion and delivery of services effectiveness. In this case, qualified community leadership for instance religious leader is needed to educate the general public about the advantages of such program.

Voluntary Counselling and Testing

Voluntary counselling and testing (VCT) can be defined as program for HIV testing that voluntarily done by individuals through education and counselling. It allows individuals to know their HIV status and serves as the gateway for both HIV prevention and for early access to treatment, care and support. Finding from a study found that VCT and education encourage IDUs to decrease risk related to injecting drugs and sexual behaviour. Information about HIV status support the short-term risk reduction of contracting HIV infection.²⁹ Moreover, counselling can effectively sustain behaviour change through risk minimisation among IDUs.

Several studies from Sub Saharan Africa reported mixed findings about effectiveness of VCT in behaviour changes among sero-discordant couples especially couples where both partner know their serostatus. Moreover, VCT seems to have little effect on pregnancy decisions by HIV-infected women importantly, their partners.³⁰ Although there is an increasing belief that increasing HIV voluntary counselling and testing (VCT) programs in developing world will have large prevention benefits through reductions in risk behaviours, these claims are difficult to establish from existing evaluations of VCT. According to Aggleton et.al evidence of effectiveness risk reduction from such intervention still lack.³¹

Number of obstacles might emerge on VCT in developing countries, for instance widespread fear of taking an HIV test because of stigma among community, loss of security, discrimination and isolation and insufficient skilled human resources. Moreover, in setting where there is strong discrimination against individual with HIV infection or not enough proper services because of scarce economic resources VCT seem not appropriate to be implemented.³⁰

In spite of all debate regarding effectiveness of VCT, this program shows promises as prevention program to curb the widespread of HIV infection among IDUs. Especially when this program is well developed and completed with other relevant services such as family planning, detection and treatment for other STDs and providing anti retroviral drug.

HIV Outreach Program and Education

Outreach is one of essential element in harm reduction. According to Rhodes and Island (1992), HIV outreach can be defined as an active endeavour HIV prevention program which provide direct services to community, linking an organization's services to the necessity of IDUs where health and risk behaviour occur within community.³²

Outreach enable to reach "hard community" such as IDUs because of stigma attached to drug use and lack of trust of health care professional when they seek care. Since no vaccine available yet to prevent HIV infection, outreach has been identified as one of common HIV prevention strategy.³³

A growing body evidence suggests that outreach based intervention could effectively reach IDUs to change their risky behaviour as a result will slow the rate of HIV infection. From 15 years research in different country setting found that outreach and face to face contact is associated with reduced risk behaviour and exposure to HIV. Especially, study show constant significant and strong post-intervention impact for instance: expanding cessation rate of injecting drug use, condom use and entry into drug substitution therapy. Moreover, it also diminishing injection frequency and sharing of injecting equipment.³⁴

From systematic review by Coyle et.al (1998) found that 36 studies largely fulfil Bradford Hill's criteria that outreach is an

effective intervention to reach out treatment IDUs and provide the means for behaviour change which strongly associated with lower rates of new HIV infection among IDUs.³³ Although this kind of intervention show premises to reduce risk behaviour and exposure to HIV, its effectiveness need to be evaluated with randomized controlled trial in which IDUs are randomly assigned to different level or intensity of intervention received.

CONCLUSION

Injecting drug user (IDU) and HIV rates are skyrocketing in almost every part of the world. Millions of people worldwide are injecting drug users (IDUs), and blood transfer through the sharing of drug taking equipment, particularly infected needles, is an extremely effective way of transmitting HIV. Because of IDUs represent approximately one third of persons infected in the HIV epidemic and continue to be at risk for transmitting HIV, therefore prevention efforts targeting IDUs should be enhanced.

Harm reduction is a pragmatic and humanistic approach available to diminishing the individual and social harms associated with drug use, especially the risk of HIV infection. It seeks to minimise problems associated with drug use

through methodologies that safeguard the dignity, humanity and human rights of people who use drugs. Harm reduction does not deny the value of helping people become drug free, or the desirability of abstinence as an eventual goal. It simply recognizes that for many drug users these are distant goals. Harm reduction approach has provided evidence of its effectiveness in reducing the risks behaviour of drug users from HIV infection.

Several elements of harm reduction such as needle and syringe program (NSP) and drug substitution therapy have shown its action in combating HIV/AIDS. Voluntary counselling and testing (VCT) and outreach program show promises as prevention program to curb the widespread of HIV infection among IDUs by providing knowledge to increase awareness of IDUs about their risky behaviours. Although there are several obstacles faces in the implementation of such programs, in the absence of an effective vaccine against HIV, improving access to harm reduction program will remain the most effective strategy to reduce HIV transmission among and from IDUs. Moreover, the implementation of comprehensive harm reduction programs is urgently needed in countries that are facing HIV/AIDS problems.

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