

Harm Minimisation in Substance Use

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Atul Ambekar and Yatan Pal Singh Bhatnagar

Summary: *Substance use, along with its associated behaviors, leads to many harmful consequences. Since substance use is a heterogeneous and dynamic condition, users go through various stages in their substance use career. Not all substance users are ready to abstain completely. However, they need help to reduce the harms or risks posed by their substance use, such as of HIV infection among injecting drug users (IDUs). For them, we need innovative, pragmatic and acceptable treatment approaches. This chapter is about a relatively recent concept, 'harm minimization', (also known as 'harm reduction' or 'risk-reduction') which aims at the prevention or reduction of the negative health consequences associated with substance use. Stemming from the public health philosophy, it aims at achieving the best possible within the constraints of the specific situation. By engaging in the treatment and reducing the adverse consequences of the substance use behaviour, it is of immense benefit to those for whom the treatment strategies aiming at complete abstinence might not work. Harm reduction is about the prevention or reduction of the negative effects of substances, both legal and illicit, on both – individuals as well as the community. Harm minimization strategies see the substance use problem with a broad spectrum, i.e., with a gradation of the possible adverse consequences. For IDUs, Harm minimisation interventions like Needle Syringe Exchange Programmes and education on the safe injecting and sexual practices help by reducing the possible physical hazards like transmission of HIV and other blood borne infections. Moreover, engagement of IDUs in the harm minimisation treatment provides with an opportunity to*

intervene in other aspects of their life. Another harm reduction strategy - opioid substitution therapy - ensures the reduction in the physical, social, familial, legal complications associated with the use of an illicit substance like heroin. Though there have been some myths associated with these strategies, there is now ample evidence that these approaches help substance users in reducing the risk of various harmful consequences. Prioritisation of the harmful or risky behaviour and the assessment and management skills on the part of the therapist constitute an integral component for the effective delivery of harm minimisation services.

Introduction

Substance use is one of the major causes of morbidity and mortality worldwide. Indeed, with the advent of HIV epidemic, substance use – in particular injecting drug use (IDU) – is now seen as a major public health issue rather than just a social/ legal issue. This chapter will discuss briefly the concept of harm-minimisation as it applies to substance use. While harm minimisation for IDU will be the prime focus of this chapter, issues related to harm minimisation for other substances will also be discussed.

Concept of harm minimisation:

Harm minimisation, also known as ‘harm reduction’ or ‘risk-reduction’ is a relatively recent concept. While the concept has been used in the context of a variety of risky behaviours, it has been seen primarily as an intervention and management strategy for the individuals using psychoactive substances. The World Health Organisation (WHO 2005) defines harm reduction as a *concept aiming to prevent or reduce negative health consequences associated with certain behaviours*. In the context of substance use, at its most basic level, it entails – as the name implies – minimisation of harmful consequences of substance use, even though the substance use itself may continue. One of the major strengths of this concept is its inclusive

and broad-based approach. Although initially there was limited consensus on the definition of the term harm reduction, of late there has been a general agreement that harm reduction refers to policies and programs that are aimed at reducing the harms from substances, but not substance use per se.

Harm reduction is about the prevention or reduction of the negative effects of substances, both licit and illicit, on both the individual as well as the community.

Abstinence from substances is not the highest or the most immediate priority in this approach. It is important to understand that, harm minimisation does not condone substance use but acknowledges that it occurs. It is a practical and pragmatic approach to deal with the problem. Harm minimisation strategies emphasize overall health and well being, encourage the use of available support networks and provide access to reliable and pertinent information.

While management of adverse physical consequences of substance use is important, harm minimisation, rather than limiting itself to the adverse physical consequences of the substance use, encompasses issues of psychological, social and economic well being. It deals with social, financial, occupational and

mental health consequences of the continued use of the substance along with the minimisation of the physical harm. Harm reduction is a flexible approach that stresses understanding of the needs of the substance user, and responding to them in a flexible and realistic manner that is acceptable to the patient. (Table 1)

Table 1
The key features and principles of harm reduction include:

- The primary goal is reducing harm rather than substance use per se;
- It is built on evidence-based analysis;
- There is acceptance that substances are a part of society and will never be eliminated;
- It provides a comprehensive public health framework;
- Priority is placed on immediate (and achievable) goals;
- Pragmatism and humanistic values underpin harm reduction.

Benefits of harm minimisation:

Substance use - A heterogeneous condition:
Substance use is a chronic health problem characterised by a long course with multiple changes in the pattern of the substance use behaviour ranging from complete abstinence to heavy use. Hence, interventions required for such a heterogeneous condition also need to be multifaceted. Multiple relapses are a common phenomenon and considered inherent to the disorder. The treatment strategies aiming at complete abstinence from the substance might not work for a substantial proportion of individuals. The reasons for this may vary from an individual to another and include :

1. Some individuals may choose to continue using the substance albeit in reduced amounts.
2. Protracted withdrawal symptoms which last for a long duration after cessation of substance use.
3. Absence of a social support system.
4. Presence of a psychiatric condition.

These individuals (who are not ready to give up substance use) continue to be exposed to certain harmful consequences of their substance use. Thus, for this group of patients, there is a need to adopt strategies that would do as much benefit as possible or at least reduce as much harm as possible. These harm minimisation strategies could be an answer to their problems.

Harms which need to be reduced: While almost every form of substance use is associated with certain harmful consequences, it is the IDU with associated risk of HIV transmission, which is the most crucial public health issue. It is a well known fact that many individuals, who use substances through injectable route, share their injection equipments. Not only the equipments such as syringe and needle but other paraphernalia – vials, cookers, pots in which substances are mixed – are also shared, increasing the risk of HIV transmission. Thus, most crucial harm reduction issue has been to reduce the risk of HIV transmission through sharing injection equipment among IDUs.

Other examples of harms associated with substance use include :

- (a) risky sexual behaviour (i.e. unprotected sex with multiple partners, sex in exchange for money, anal sex – with partner of either gender, sex associated with violence or crime,

etc.) with associated risk of transmission of HIV and other sexually transmitted infections, and

- (b) drunk driving with associated risk of accidents.

Some other examples of substance-related harm are overdose of the substance, suicide attempts, domestic violence, child abuse and neglect, etc.

Harm minimisation may help: Harm minimisation strategies see the substance use problem with a broad spectrum, i.e., with a gradation of the possible adverse consequences. Rather than looking at the complete absence of the substance as the only possible goal, they tend to make a hierarchy of the adverse consequences of the use of the substance and then intervene at the appropriate levels with the available and feasible resources. Harm reduction works on the premise that one should not be denied the benefits of the available services merely because he/she is not able to stop the substance using behaviour. Rather people should be offered the best possible services which would be of help to them, in spite of the ongoing substance use. These interventions are aimed at helping people minimise the harmful consequences of their behaviours, although they might not be able to bring these behaviours to an ideal 'nil' level.

The concept of harm minimisation stems from the public health philosophy. It acknowledges that some of the individuals are not able to completely give up substance use in spite of the adverse consequences. For them, harm minimisation is seen as a viable alternative. However, indulgence in these high risk behaviours is not a static condition but tends to be dynamic. Thus an individual not able to quit the behaviour at all at one point in time may be amenable to some reduction or modification in

the behaviour. At a later stage the same individual might be able to quit it altogether. This needs to be kept in mind while planning any interventions for these individuals as one strategy chosen for an individual at a given time may need to be revised over time as per the needs.

The most impressive success of harm reduction has been control of the spread of HIV, mainly through the introduction of needle exchange.

Substance abuse control – where does harm minimisation fit?

Control of psychoactive substances is a constellation of three strategies:

1. Supply reduction
2. Demand reduction
3. Harm reduction

1. Supply reduction: Supply reduction aims to decrease the amount of the substance available, thereby leading to a decrease in substance use. The approaches employed to reduce supply of the substances include law enforcement mechanisms (such as police, customs, excise, and Narcotic-control departments) to prevent or intercept substance trafficking, illegal manufacture, supply and dealing of the substances of abuse. Identification and destruction of illegal production of the crops yielding the raw materials used in the manufacturing of these substances also reduces the availability of the finished product. Illicit substance laboratories are also targeted to bring down the number of the manufacturing units of the substances. Licensing of the sale of certain substances like alcohol ensures a control, to an extent, over the number of vendors and the selling hours of the liquor. Strictly enforcement

of the laws prohibiting the sale of the substances of abuse to certain specific groups (like those under a specific age) is an attempt in the same direction. Additionally, prohibition of use of substances in public places also puts a check on the use of the substances.

2. Demand reduction: The focus of the demand reduction strategies is to reduce the uptake of substances of abuse at the level of the users. The interventions may aim at the level of the individual users or the community at large. Information, education and communication (IEC) activities carried out at the level of the individual as well as the community go a long way in creating awareness about the problems related to the use of these substances. Health promotion strategies and media campaigns to increase awareness at community level of the health and safety risks associated with use of the substances are other examples of demand reduction. Such approaches prevent the initiation of the use of substances by those who have not yet started using them. It also benefits those already using the substance. At times such information is the first realization by the substance users of the adverse consequences of the use of substances. Additionally, identification and treatment of substance users is also seen as demand reduction strategy since treatment is aimed at reducing the need ('demand') to use the substances.

3. Harm reduction: Harm reduction aims at minimization of the harmful consequences of the ongoing use of the substance. It does not look directly into the aspects of the reduction in the amount of the substances available for use or the actual use of the substance. Rather, it emphasizes the reduction in the potential adverse outcomes associated with substance use.

Like the previous two strategies, harm reduction

approach can also be directed at the individual users, groups or the community.

Specific Harm reduction strategies:

A detailed description of all harm reduction strategies is out of scope for this chapter. This chapter will limit itself to two most commonly discussed and researched harm reduction strategies viz.

- (a) agonist substitution programmes and
- (b) needle-syringe exchange programmes.

A. Agonist substitution programmes

These programmes, known by a variety of names such as "agonist assistance programme" or "oral substitution treatment" rely on the principle of substituting an illicit substance with a legal medication. For India, these programmes are very relevant since opioids are the most common substances injected.

Rationale for agonist substitution: All opioid substances act on specific opioid receptors in the brain. Thus, if an individual who is using one type of opioid substance (e.g. heroin) is given another medication with similar action (e.g. buprenorphine), it will occupy most of the receptors. If now the heroin is taken, it may not exert its effects since the receptors are already occupied by buprenorphine. This phenomenon is called 'cross tolerance'. Thus, an illicit substance of unknown purity and potency, used through a potentially harmful, injecting route, is substituted by a safe, legal medication with known purity and potency, used through a safe (sublingual) route. Consequently, the need to take the illicit, dangerous substance goes down.

In a strict pharmacological sense, a person

dependent on illegal opioid substances, administered buprenorphine for agonist maintenance treatment, remains dependent on opioids. The only difference is that now the person can fulfil his social/occupational duties, since he doesn't have to worry about his next dose of the substance. He also doesn't have to go through the unpleasant withdrawal symptoms. Hence, through continuing to be dependent on opioids, he leads a productive, risk-free life. At a subsequent date, the individual may become ready to gradually taper and stop his maintenance medication.

Medications for agonist maintenance: . Though an ideal agent continues to remain elusive, methadone, LAAM, buprenorphine and slow release oral morphine have been the most researched agents. All of them have been shown to be effective in reducing use of illicit substances, risk of injecting (and subsequent HIV transmission) and the risk of overdose. These medications also reduce involvement in illegal activities and improve the socio-occupational functioning. They have been found to promote the transition to a fulfilling and healthy lifestyle. Table 2 lists the qualities of an ideal agonist maintenance medicine.

Table 2
An ideal medication for maintenance treatment of opioid dependence:

- Should be legal, easily available and inexpensive
- Should be safe and free of toxicity
- Should be long-acting
- Should have minimum abuse liability and dependence potential
- Should be easy to administer
- Should control the withdrawals from and need of illicit opioids effectively

B. Needle Syringe exchange programmes

Yet another well-conceived, very effective, yet controversial harm-reduction strategy is Needle Syringe Exchange Programmes (NSEP). At its most basic level, this strategy involves supplying new, clean needles and syringes to IDUs, in exchange of old used, needles and syringes.

Rationale for Needle Syringe exchange programmes: It is a well-established fact that many IDUs share their injecting equipments. While there are multiple factors underlying the practice of sharing, the most important one is that many IDUs do not have access to affordable clean needles and syringes. Availability of new, clean injecting equipments, free-of-cost, provides the IDUs with an opportunity to protect themselves and their injecting partners from transmission of HIV. At the same time, this involvement in the programme could also be used to provide them other important services such as education about healthy practices, management of certain complications such as abscess or thrombophlebitis at the injection site, counselling and testing for HIV, referral to substance dependence treatment services etc. Thus, while as a stand-alone activity, NSEP protects IDUs from HIV, it also acts as a stepping-stone to provide various other services by ensuring an ongoing contact with the IDUs. Such programmes have been found to be effective in reducing the sharing of injecting equipment among IDUs, and reducing the incidence of HIV sero-positivity among IDUs .

Safe injection facilities

At certain places, the concept of providing clean needles and syringes has been taken yet another step forward, to provide – not only the clean syringes or needles, but – a safe injection facility. Also known as ‘injection rooms’, in these

facilities, opportunities are provided to IDUs to inject pre-obtained illicit substances under the supervision of and/or by the medical staff. Most such facilities also provide sterile injecting equipments and interventions in the event of overdose. The scope of services could be broadened to also include primary health care, addiction counselling, and referral to external health and social services. Even though they have remained controversial, research has shown that there is no risk of these facilities being seen as encouraging substance use.

C. Other harm-reduction approaches

Some of the other harm-reduction approaches could include:

I. Education to IDUs about safer injecting practices (such as using adequately cleaned and sterilised injecting equipments, if reuse and sharing are inevitable).

II. Alcohol harm reduction:

- (a) **Promoting designated-driver programmes:** One of the major public health consequences of excessive alcohol use has been 'drunk-driving' resulting in accidents and subsequent injuries, mortalities and disabilities. If people who drink in groups are educated to designate one of them as the driver (who ensures not getting drunk, so that s/he can drive everyone else safely home) the risk of accidents could be significantly reduced. In some countries, bars and night-clubs provide their visibly drunk patrons a free cab-ride back home.
- (b) **psychosocial approaches aimed at reducing the amount of alcohol consumed, in a safe manner such as moderation management or controlled drinking**

Myths and controversies surrounding harm

reduction

Though found to be very effective, almost all the strategies subsumed under harm reduction have been mired in controversies. One of the reasons behind these controversies is various myths surrounding harm reduction. (Table 3) As seen in the light of the evidence presented here and as reviewed in greater details by various other researchers, harm reduction strategies, if employed judiciously and with proper planning, have no risk of increasing any harm, and go a long way in protecting people and promoting safer behaviours.

Harm reduction in India

In India, IDU has been recognised as one of the contributory factors for spread of the HIV epidemic. In two states of India (Assam and Nagaland), HIV epidemic is primarily IDU driven. In fact, as per the latest sentinel surveillance data, IDUs are the vulnerable group with highest (more than 10%) HIV prevalence in India (NACO 2006). For the purpose of HIV prevention among IDUs, many targeted interventions for IDUs are in place, which are being implemented by the NGOs and supported by the government. Most of these interventions involve education, counselling, referral and needle/syringe exchange services. Unfortunately, the coverage of the IDU population by these interventions has not been adequate. Similarly, agonist maintenance is also available at very few centres in the country. There is an urgent need to enhance the quality and coverage of harm reduction strategies in India.

Examples of the prioritisation of the behaviours for the purpose of harm minimisation:

Use of psychoactive substance is associated with multiple complications. The complications are related to the physiological effects of the substance on various body systems, the

**Table 3: Harm Reduction: Myths and Facts
(NSEP=Needle Syringe Exchange Programmes)**

Myth	Fact
NSEP does not reduce incidence of HIV among IDUs?	In an Ecological study of 81 cities worldwide comparing those with and without NSEP, the average seroprevalence increased by 5.9% per year in the 52 cities without NSEP's, while it decreased by 3.3% per year in the 29 cities with NSEP's (Hirley & Jolley 1997)
NSEP encourages and increases substance use?	Injection frequency has been, in fact, found to be reduced among NSEP participants (Winters 1994)
NSEP does not lead to reduction in sharing?	Multiple studies have shown that involvement in NSEP does lead to a reduction in sharing. Such evidence is available from western countries (Longshore 1998) and from our own neighborhood, Bangladesh (DNC 2002)
NSEP discourages people from seeking into substance treatment?	There is clear evidence that NSEP increases entry and retention into substance treatment programmes (Hagan et al 2000)

psychological effects of the substance and socio-occupational impairment. Additionally, injection drug use is also associated with the adverse consequences of the *mode of use* of the substance. These consequences, specific to injecting, may range from pain, extravasations of the substance at injecting site and local infections. Similarly, use of reuse needles and syringes on more than occasion would subject the user to the risk of local or systemic infection. Additionally, sharing of the injecting paraphernalia exposes the users at the risk of transmission of blood borne infections such as HBV, HCV and HIV among others. Moreover, while being under the influence of the substance use may indulge in high-risk sexual behaviour. The possible reasons of this behaviour could be loss of inhibition, cognitive impairment, impaired judgment or mere experimentation.

The harm minimization approach to the problem of substance use in general and injection substance use in particular would include the primary step of making a hierarchy of the substance use behaviour and adverse consequences of the same. This hierarchy would vary from one individual to the other and needs to be individualised, but certain generalizations could be made.

Such prioritizations would be the preliminary steps in the intervention strategies in the harm minimization paradigm. For injection drug use reduction in the number of the sharing partners would be the initial step. Similarly limiting the number of sharing partners to one would further reduce the risk. Complete cessation of sharing would further reduce the risk and stopping reuse by the same individual would further reduce the likelihood of the complications. Needle exchange programme by preventing the reuse and sharing helps achieve these aims. Further interventions

Table 4

Harm reduction related to IDU: Interventions

1. Do not use drugs
2. If you have to use drugs, do not inject
3. If you have to inject, use new materials and do not share needles, syringes, spoons, water, substances
4. If you need to re-use equipment, clean adequately and use your own
5. If you must share, clean or disinfect bottles and limit your number of sharing partners

Harm reduction related to risky sex: Interventions

1. Do not have sex / have sex with only one partner
2. If more than one partner, avoid penetrative sex
3. If penetrative sex, use condoms; Avoid anal sex
4. If anal sex unavoidable, condom use is a must

would aim at stopping use of injecting route, providing the individual with agonist medications and reducing the individual's indulgence in associated illegal activities. Complete stopping of agonist and shifting to antagonist would be higher on the list of interventions.

Skills for the therapist:

To practice the strategies of harm minimisation, one has to be equipped with certain assessment and management skills. Most of these skills are based on the basic principles of the management of substance use with appropriate modifications for reduction of the harmful consequences rather than complete abstinence from the substance. The therapist should be well versed with the specific modalities that (s)he wishes to implement

with his/her clients. These skills aim at the identification of individuals with the problem of substance use, screening them for the suitability of harm minimisation strategies, development of individually tailored interventions and subsequent review of the interventions and any modifications/ changes as required. The requirements for a therapist would range from in-depth knowledge of the specific intervention modality to detailed assessment skills for substance use, presence of physical complications, psychological and socio-occupational assessment. One can be helped in this process by the following guiding principles. These principles provide a generalised overview of the issue and may need to be modified for individual patients.

- Apply harm minimisation principles when working with patients to satisfy their individual needs
- Explain the concept of harm minimisation and provide advice to a patient on harm minimisation practices which can be applied to the use of specific substances
- Identify and involve other stakeholders i.e. other important individuals in the vicinity
- Analyse substance use situations in terms of their potential for harm and suggest strategies that address these harms to satisfy the needs of all stakeholders.
- Take a coordinated team approach in relation to work practices, techniques and circumstances that respond to situations involving the risk of substance use harms to community members.

Conclusion

It is clear that different types of harms may be associated with substance use. These harms may

be reduced by decreasing the quantity of substances taken, ensuring safer methods of administration and by encouraging healthy living skills. However, a meaningful and effective strategy for harm reduction must include a sustained effort to communicate with, and educate the community objectively about illicit substances. Such an approach would help to educate the community regarding the problem at hand and the basis of the management strategy being employed. Improved understanding and education of the community by dispelling myths would minimize the likelihood of programmes being opposed and encourage community participation and ownership of the programme.

Suggested reading material

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