

DOES HEROIN USE DISORDER INTERVENTION 'WORK'? A CRITICAL REVIEW

Monika dos Santos, South Africa

(DPhil Psychology, PhD Clinical Psychology Student of Texila American University)

E-mail: monikad@foundation.co.za

ABSTRACT

Abstract Of all the vice problems confronting South Africa and many other countries, the heroin dependence syndrome and its consequences pose some of the most serious challenges. While the treatment and management of heroin use disorders continues to be characterized by new developments, altering perspectives, and by controversies of one kind or another, the literature findings suggest that different treatment settings may be appropriate for different heroin users. People who are treated for heroin use disorders achieve a continuum of outcomes with respect to their heroin-taking behaviour and their heroin-related problems. Treatment response is thus not a simple matter of success or failure. As with many treatments, the assessment of outcome involves degrees of improvement, and these may have different meanings for different individual cases. Although there is a general acceptance of such goals as improved health, or reduction or elimination of heroin consumption, it is also necessary to be aware of the need for flexible goals that can be adapted to individual circumstances.

INTRODUCTION

For many years, the traditional view of heroin dependence was extremely pessimistic about outcome. The received wisdom suggested that people who become dependent upon heroin seldom gave up, and that treatment had little effect. An editorial in the first edition of the International Journal of the Addictions stated that there is no relationship between treatment and the outcome and that, regardless of the treatment provided, 'the great majority of addicts simply resume drug use' (Einstein, 1966). Similarly, an early review of treatment evaluation studies noted that 'the treatment of heroin addiction has been singularly unsuccessful'. This traditional view tended to perceive heroin dependence in terms of an inevitable and progressive deterioration, and some natural history formulations have been more concerned to account for the deterioration of the addict than to allow for the possibilities of recovery (Callahan, 1980).

The history of heroin use disorder intervention has often been characterised by fads and fashions. Some of the treatments that have been used have been, at best, ineffective and, at worst, harmful and occasionally even dangerous. It is a sad reflection upon the field that practices and procedures for the treatment of heroin dependence can so easily be introduced and applied without (or even contrary to) evidence. This is illustrated by the extraordinary range of interventions that have been used to detoxify heroin dependents. Several of these treatments have been more dangerous than the untreated withdrawal syndrome (Kleber, 1981). Interventions have included the administration of hyoscine, strychnine, and nitroglycerine, as well as belladonna treatments involving the administration of scopolamine (causing hallucinations and agitation, requiring physical restraint by 'a strong nurse'). Other extreme

forms of treatment have included electroconvulsive therapy, and insulin-induced hypoglycaemia (Gossop, 2003).

The risks of such treatments are indicated by reports that, in a hospital where 130 patients were given the hyoscine treatment, there were six deaths in a year. This should be judged in the context that, although the heroin withdrawal syndrome causes considerable discomfort, it is of relatively short duration and is not medically serious, much less life-threatening. The use of sodium thiocyanate was found to lead to delirium and psychosis, often lasting as long as two months. Some of the treatments may appear reassuringly old-fashioned and little more than historical curiosities. Other treatments from the past have more modern counterparts. Bromide sleep treatment was used in the early decades of the 20 century, as was 'artificial hibernation' with up to 72 hours of sodium pentothal-induced narcosis. This also led to deaths. Kleber (1981) refers to the deaths of 2 out of 10 patients treated in this way. In recent years there has been some enthusiasm for accelerated heroin detoxification under anesthesia. Such treatments tend most often to have been provided by privately owned operated (for profit) organisations.

The notion that heroin dependence involves a progressive and irreversible deterioration is a view that has considerable resonance with popular conceptions of substance dependence. In its crudest form it can be found in the 'dope fiend' myth of inevitable social, moral, and physical decline. This view has been popular since at least the end of the 19 century, and it is a testimony to its staying power that a variation of this theme surfaced in the UK government anti heroin campaign, which under the slogan 'heroin screws you up' depicted rapid decline in health and loss of control over intake. A market research evaluation of the campaign showed that this led to an increased belief among young people that death was an inevitable consequence of heroin use (Gossop, 2003).

Prior to the 1970s, there was virtually no formal understanding of the addictions, and little was known about how heroin use disorders could be effectively managed or treated. During the late 1960s or early 1970s, many countries established systems of substance dependence intervention services. Prior to this, intervention was provided by very small numbers of 'specialist' doctors, or in other types of services (mental hospitals, prisons). Differences in the governing ideas behind British and American substance dependence policies were articulated in the 1916 Harrison Act in the United States and the 1926 Rolleston Report in the United Kingdom. The United States tended to pursue a policy that was reliant solely on control measures. The United Kingdom took a more medicalised view of the disorder and its management. These differences are still reflected in the contrast between the British acceptance of harm-reduction measures that can be utilised to limit the damage to the continuing heroin misuser, and the American goals of 'zero tolerance', 'users accountability', and a 'drug-free America' (Kleber, 1981).

When the UK drug clinics were first established (after 1968), they were almost all run by psychiatrists. Diagnoses were assigned to heroin dependent patients on an ad hoc basis after an informal clinical interview. The diagnoses were often unreliable and provided almost no useful information about aetiology, course, or treatment needs. The consequences of this were less damaging than they might have been since the intervention options available at that time were so limited. Out-patient intervention involved unsystematic forms of prescribing (it would be misleading to describe this as representing any planned or systematic programme of maintenance). In-patient treatment intervention usually took the form of loosely organised therapeutic communities with various 'eclectic' interventions applied, according to the clinical preferences of the staff. Behaviour therapy and biological psychiatry were still developing

disciplines. Social and cognitive learning theories had yet to make an impact upon the field. The history of medicine suggests that the origins of treatment for any problem tend to follow the identification of severe cases and that, during its early stages of development, treatment consists of applying whatever remedies are available when the problem is first recognised (Gossop, 2003). Heroin use disorder myths

The users' exaggerated fear of withdrawal fulfils a similar role, offering a powerful justification for not coming off heroin. The idea that heroin withdrawal involves unbearable pain has proved to be the most convenient fiction for the media. It provides exactly the right sort of voyeuristic titillation for which the general public has shown itself to be so eager. *Basketball Diaries* and *Trainspotting* linger over the agony of heroin withdrawal. The hyperbole of these accounts bears little resemblance to what might more realistically be compared to a dose of flu: certainly heroin withdrawal can be unpleasant and distressing, but it fails by some considerable distance to match up to the myth (Leggett, 2001; Gossop, 2000; Kenny, 1999; Pearson, 1987; Kohn, 1987; Kaplan, 1983).

Although the opiate withdrawal syndrome is one of the accepted criteria of physical dependence, it contains a very large psychological component (American Psychiatric Association, 2000; Kaplan, 1983). For most heroin users, withdrawal and craving are inextricably linked: each one produces the other. According to the principles of Pavlovian conditioning, if a user regularly associates a particular place or event with their injection of heroin, that place or event will acquire some of the rewarding properties of the drug itself. As a result, things that are of no special significance to other people can provoke a powerful need for heroin in the user. Craving and conditioned withdrawal symptoms can be triggered off by the sight of a regular scoring place, or by music that evokes strong heroin-related memories for the user (Marlatt & Gordon, 1985). Conditioning processes can also have the opposite effect. When a user is badly in need of a fix but possesses no heroin, they can obtain some relief from their craving by injecting water, or even by just pushing their needle into a vein. This event has come to provide a small part of the drug experience with which it has been so often associated (Gossop, 2000; Finnegan, 1995; Kaplan, 1983; Strang, Griffiths, Powis, Abbey & Gossop, 1992).

The actual process of withdrawing from heroin presents few medical problems and can be managed easily and with the minimum discomfort for the dependent. The time taken to complete withdrawal will vary according to the preferences of the doctor and the user, but for heroin it can be completed in anything from a couple of days to two or three weeks (Gossop, 2000). In contrast, withdrawal from alcohol and benzodiazepines, for example, carries some of the more serious medical risks, and can be one of the most distressing withdrawal periods for the individual (Gossop, 2000; Kohn, 1997; Freedman, 1992). In comparison, the opiate withdrawal syndrome can be reduced to minimal proportions by a carefully regulated withdrawal regime, yet almost all heroin dependents are terrified of withdrawal. This exaggerated fear makes more sense if it is reinterpreted as a fear of living without drugs. What terrifies the user are not the symptoms of withdrawal, distressing though these may be, but the dawning emptiness beyond, the prospect of learning to live without a chemical crutch (Gossop, 2000; Friedman, 1992).

In this context, it is futile to look for the objective causes of heroin dependence, or to talk of whether or not the heroin dependent can really give up heroin. The attitudes, beliefs and expectations of such a person are of paramount importance. If heroin dependents believe that they are completely helpless before the power of heroin, then they are indeed helpless. But the origins of the helplessness lie in the psychology of the dependent and not in some chemical property of the drug (Dos Santos & Van Staden, 2008; McIntosh & McKeganey, 2002; Gossop,

2000).

The clearest and most convincing evidence against the heroin user's need to remain dependent is that large numbers of people abandon their dependencies through their own efforts. In her studies of American servicemen, Lee Robins (1993) found that, although the use of drugs was rife in Vietnam, the numbers who became re-dependent on drugs on their return to America were extremely low (the social significance of this study is discussed later). Even among those who had been dependent on opiates (mainly heroin) in Vietnam, only 7% became re-dependent on opiates after going home, and less than 1% felt that they had been dependent on substances since their return. More than nine out of every ten addicts were able to give up. Admittedly, the circumstances in which these studies took place are very unusual, but even among the ordinary street heroin dependents it is not generally known that many successfully give up heroin (Terry, 2003; Gossop, 2000). Compared with the usual civilian statistics regarding opiate dependence, these figures are remarkably low: one might have predicted that many more of the men would have experienced serious problems relating to the use of opiates. The low re-dependence figures are also surprising in view of the psychological readjustment problems experienced by many of the returning soldiers. Post-traumatic stress syndrome was increasingly recognised among these individuals (Terry, 2003; Gossop, 2000; Kenny, 1999). However, studies have shown that heroin dependence is far from being the irreversible condition that it has sometimes been assumed to constitute (Dos Santos & Van Staden, 2008; McIntosh & McKeganey, 2002; Winnick, 1962).

There are a number of separate influences at work here, each of which affects the likelihood of heroin ingestion. During the Vietnam War, these combined to provide the conditions in which this activity was most likely to occur. Psychologically, the experience of suddenly being removed from a safe, familiar environment to a strange, foreign and extremely threatening one increases the pressure upon the individual to take drugs. Drugs are a useful means of coping with the mixture of fear, physical tiredness and boredom that is such a familiar feature of military life during a war. Socially, the tour of duty in Vietnam was characterised by a removal of many of the usual social and moral restraints that reduce the likelihood of heroin taking. The soldiers themselves were inclined to regard their tour of duty as something separated from 'real life' and there were various social pressures to take drugs simply because so many others were using them. Last but not least, there was the physical availability of heroin and other drugs. It is difficult to imagine conditions more likely to promote their widespread use (Terry, 2003; Gossop, 2000; Kenny, 1999; Vietnam & America: A documented history, 1995).

What happened in Vietnam and afterwards conflicts with several popular beliefs about heroin dependence. It is usually assumed that heroin dependence is an inevitable consequence of using the drug, and that, once it has taken hold, it is virtually impossible for the user to rid him or herself of the habit. The Vietnam experience shows that neither of these beliefs is true. Even of those who were dependent in Vietnam, the vast majority were able to cast off their use when they returned to America (Gossop, 2000; Kenny, 1999).

This curious episode in the history of heroin taking is a good example of the ways in which changes in social circumstances can powerfully affect the ways people use heroin. The young men who served in Vietnam were removed from their normal social environment and from many of its usual social and moral restraints. For many of them it was a confusing, chaotic and often extremely frightening experience, and the chances of physical escape were remote except through the hazardous possibilities of self-inflicted injury. As a form of inward desertion, heroin

represented a way of altering the nature of subjective reality itself. The Vietnam War veterans' experience contradicts the notion that heroin dependence is related to individual psychopathology or criminality: the way in which the public sees the dependent depends on who he or she is. In other words, how these heroin dependents were treated and, in turn, how they saw themselves, has more to do with social context than it necessarily does with individual deficiencies (Terry, 2003; Gossop, 2000; Kenny, 1999).

Primary heroin use disorder therapeutic modalities

There has been a significantly increased emphasis on matching clients to intervention. For many heroin dependents and especially those with long and complex histories, the assessment procedure itself may be a therapeutic process. The telling of the 'life story' — some of it spontaneously, some in answer to direct questions — helps the individual, perhaps for the first time, to see their drug taking in some sort of perspective. The account of the present social circumstances clearly identifies current problems and needs. This clarification to an outsider is, or can be, a clarification to the heroin abuser too so that what needs to be done, the way forward, becomes apparent to both (Ghodse, 1989). However, assessment is not an end to itself. The aim of assessment is to offer the individual an appropriate intervention programme. The skill of the helping professional lies in the accurate assessment of the problem and the accurate matching of heroin dependent to treatment option (although heroin dependent and professional may not always agree).

Six major non-pharmacological approaches to psychosocial intervention have been identified: (i) 12-step, (ii) psychodynamic, (iii) marital/family, (iv) cognitive-behavioural, (v) contingency management and (vi) motivational approaches. Approaches based on the Alcoholics Anonymous 12-step model are still clearly dominant in the field of substance dependence intervention, and have continued to dominate despite significant inroads from both motivational and cognitive-behavioural approaches (Rotgers, Morgenstern & Walters, 2003; Alcoholics Anonymous, 2001).

Although psychodynamic theory traditionally has not addressed itself to substance dependence, a number of innovative approaches based in psychodynamic thinking have been developed more recently. These newer approaches are particularly attractive because of their potential to enhance the implementation and efficacy of other treatment approaches. In both research and clinical settings, an increased emphasis is being placed on working with clients who have co-occurring psychiatric and substance use disorders. Because of this, psychodynamic approaches, though they were not originally developed to treat substance use disorder psychopathology, can provide useful ways of conceptualising and working with substance users (Aziz, 1990).

Marital and family approaches to substance use disorder intervention have a long and diverse history, and have garnered some of the strongest research evidence for their efficacy. In addition to strong research support, these approaches provide a means of integrating apparently disparate aspects of a client's life into a more coherent treatment and support network that can help produce and maintain changes in substance use (Rotgers, Morgenstern & Walters, 2003; Corsini & Wedding, 1995).

Cognitive-behavioural approaches, while not widely used clinically, have become more apparent in clinical programmes, at least in name. These approaches have amassed the strongest research support for the efficacy of any approaches presented in this article. Cognitive-behavioural approaches are ideally suited to client-treatment matching because they are inherently orientated to the individual, with each client's treatment being potentially different in scope and process, depending on the results of thorough pre-treatment and ongoing assessments (Hayes, Barlow &

Nelson-Grey, 1999).

Contingency management approaches are behavioural therapies that increasingly have been found to be efficacious. Originating in the theoretical ideas of B.F. Skinner, contingency management approaches share the advantage with marital and family approaches that the client's environment is mobilized in the service of behaviour change and maintenance. Strongly supported by research evidence, contingency management treatments can be particularly effective in combination with cognitive-behavioural and 12-step components in a broad-based treatment 'package' (Rotgers, et al., 2003).

Motivational enhancement approaches have continued to attract both research support and clinical popularity. Perhaps the most influential development in the late 20 century substance dependence treatment intervention field, motivational enhancement approaches are now established in the mainstream of substance dependence treatments. Based on research into social psychology and behaviour change theories, motivational enhancement approaches attempt to mobilize clients to change maladaptive behaviour to more healthful patterns (Marlatt & Gordon, 1985). To some extent these approaches have gained popularity as a reaction against traditional confrontational approaches that focus on aggressively breaking through clients' 'denial'. Instead of aggressive confrontation, these motivational approaches take advantage of client ambivalence about the pros and cons of substance use to help produce movement toward change. Heroin use disorder intervention

The therapeutic landscape of substance use disorder treatment has changed dramatically since the 1960s, and especially during the past two decades. Many promising interventions and procedures and therapeutic agents have been developed. There is a range of pharmacological options, where once there were very few. There is increasing evidence about the effectiveness of many of these intervention options. There is also an understanding of the importance of the social environment, educational development, behavioural functioning, cognitive processes, and the use of active coping strategies during recovery to improve longer-term outcomes. Nonetheless, the treatment and management of heroin dependence continues to be characterised by new developments, changing perspective, and by controversies of one kind or another.

Heroin dependence interventions should be appropriately responsive to the needs of individual heroin dependent. The need for responsiveness to individual differences requires attention to specifics. These include issues such as whether the substance is taken orally, by smoking, or intravenously, whether discontinuation will lead to clinical withdrawal syndrome requiring medical treatment in its own right, and whether the dependence is integrated within the user's personality and social lifestyle or is regarded as an isolated item of problem behaviour. The problems associated with heroin dependence generally extend beyond the dependence syndrome, and include other behaviours and disorders. Also, each heroin user may experience different problems, which may range from the acute to the chronic, and from the mild to the extremely severe. Heroin dependence problems are diverse and are manifested by people with different backgrounds and characteristics. There are also many different types of treatment approaches and interventions (Gossop, 2003).

Many heroin dependents have social and/or psychological problems that precede their dependence (Rodrigues-Llera, Domingo-Salvany, Brugal, Silva, Sanchez-Niubo & Torrens, 2006; Vasile, Gheorghe, Civrea & Paraschiv, 2002; Karam, Yabroudi & Melhem, 2002; American Psychiatric Association, 2000; Leshner, 1999). These may include social behavioural problems from an early age, educational failure, literacy problems, family disintegration, lack of legitimate job skills, or psychiatric disorders. Such problems tend not to resolve themselves

simply because the individual gives up heroin and, unless specific services are made available to deal with them, their problems may continue to cause difficulties for the individual and for their chances of recovery. For many heroin dependents, recovery is not only a matter of giving up heroin-seeking behaviour but also involves tackling the social and behavioural problems that may have preceded the addiction and that have often been worsened by it (Dos Santos & Van Staden, 2008). The treatment of heroin dependence problems, therefore, may include interventions that extend beyond the focal point of heroin consumption, and that tackle the personal/psychological and social impairments that may affect those who enter treatment.

Intervention efficacy

The assessment of intervention need has been defined in terms of the ability to benefit from health care (Stevens & Raftery, 1994). The need for intervention has a neutral or pragmatic meaning and possesses specific relevance to the provision of health care which, in this context, should be interpreted with regard to the potential of specific types of interventions to remedy heroin-related problems. In the evaluation of the effectiveness of treatment interventions for heroin dependence problems, the elimination or reduction of heroin/drug use usually serves as a primary outcome measure. A more comprehensive assessment of the impact of treatment may also use secondary outcome measures to measure changes in health and social functioning (Gossop, 2003).

An important conclusion to be reached from the study by Dos Santos, Rataemane, Trathen, and Fourie (2010) and the 2008 study by Dos Santos and Van Staden, as well as from treatment intervention research reviews, is that no single type of treatment intervention can be expected to be effective for everyone who experiences a heroin dependence problem. Heroin users are a diverse and heterogeneous group, and these individual differences may be relevant to the selection of appropriate, holistic and effective treatment interventions. Different individuals prefer and may benefit from the different kinds of interventions. A range of promising alternative therapies are also available, each of which may be optimal for different types of individuals, which may be beneficial in increasing self-awareness and preventing therapeutic overload.

A total of 615 heroin users enrolled in the Australian Treatment Outcome Study (ATOS); 94.5% of the sample completed at least one follow-up interview over a 36-month follow-up. The proportion who reported using heroin in the preceding month continued to decrease significantly from the baseline to the 24-month follow-up (99% versus 35%), with this rate remaining stable to the 36-month follow-up. The reduction in heroin use was accompanied by reductions in use of other drugs. There were also substantial reductions in risk-taking, crime, injection-related health problems and improvements in general physical and mental health. Positive outcomes were associated with more time in maintenance therapies and residential rehabilitation and fewer treatment episodes. Time spent in detoxification was not associated with positive outcomes; major depression was also associated consistently with poorer outcome. At three years, there were impressive reductions in drug use, criminality, psychopathology and injection-related health problems following treatment exposure (Teesson, Mills, Ross, Darke, Williamson & Harvard, 2008). Findings of the study by Dos Santos et al. (2010) and of Dos Santos and Van Staden (2008) suggest that the pathways to recovery tend to be complicated, and the variety of possible outcomes is extremely great. People who are treated for heroin dependence problems achieve a continuum of outcomes with respect to their heroin-taking behaviour and their heroin related problems. After treatment, some people may show initial improvement, with subsequent

deterioration. Others may initially show little change but then gradually achieve a range of possibly substantial improvements. Others may oscillate between outcomes, with periods of abstinence alternating with periods of heroin/drug use. There is also no single, universally applicable measure for the assessment of outcome. Treatment response is not a simple matter of success or failure. As with many of such treatments, the assessment of outcome involves degrees of improvement, and these may convey different meanings for different individual cases (Gossop, 2003).

It is not uncommon for some heroin dependent individuals to lack the basic social behavioural skills and supports that they need to complete, and sometimes even to start, the recovery process. After many years, or even decades, of living a life that has been built upon getting high, buying, selling, talking, and thinking heroin, it is not surprising that giving up and staying off heroin should prove to be an extremely difficult task. Such individuals often require intensive and prolonged help to cope with the psychological, social, economic, and practical challenges of recovery (Dos Santos & Van Staden, 2008; Gossop, 2003).

Heroin use outcomes after intervention may include: abstinence from all forms of substance use maintained for a lifetime; abstinence followed by temporary lapse, followed by abstinence regained; reductions in (but not abstinence from) heroin use; reductions in heroin use but continued or increased use of other psychoactive substances; substitution of heavy drinking for heroin taking; no change in heroin use behaviours but reductions in heroin-related problems; and deterioration in heroin use and in heroin-related problems (Gossop, 2003).

The question 'does heroin use disorder intervention work?' also places too much weight on treatment intervention. It does not put the processes of treatment intervention into an appropriate perspective. Many factors contribute to outcome, and treatment intervention is only one of these. Outcome is also influenced (often powerfully) by the psychological, social, and other characteristics of the individual, the nature and severity of the problem itself, and by a wide variety of post-treatment experiences and events. It is influenced by complex interactions between all these factors (Dos Santos & Van Staden, 2008; Gossop, 2003). The probability of a positive outcome for a homeless heroin injector, for example, with a severe mental illness and HIV/AIDS is likely to be lower than that for a socially stable person with a dependence on a prescribed psychoactive substance taken orally. The probable differences in outcomes would remain even if each of these individuals received an individually tailored treatment intervention (Gossop, 2003).

CONCLUSION

From the literature review it may be concluded that the effectiveness of treatment is a complicated matter to understand and assess. The question 'does heroin use disorder intervention work?' is far too simple. Treatment intervention involves a variety of different practices and procedures that are used with different populations and that are designed to achieve different goals. At the simplest level, treatment intervention is required to tackle both the initiation of change and the maintenance of change. It is one thing to give up heroin. It is another to stay off it. Heroin dependence treatments include a broad range of interventions that vary in content, duration, intensity, goal, setting, provider, and target population. Research data are increasingly becoming available on the effectiveness of the broad spectrum of treatments (Gossop, 2003; Myers & Parry, 2002).

st century, scientific information is now It is easy to forget that the treatment of individuals with substance use disorders has only been rendered in an organised service delivery system for less than 50 years. The systematic application of science to the study of substance use disorders on a large scale has only occurred for just over 25 years. Outpatient treatment has only offered an organised form of care for just over a decade. As progression is made in the 21 beginning to be used to guide the evolution and delivery of substance dependence care. Much of what is currently delivered as treatment intervention is based upon current best guesses of how to combine some science-based (e.g., cognitive-behavioural therapy and pharmacotherapies) and some self-help (12-step programmes) approaches into optimal treatment protocols. We are at the beginning stages of determining how this should best be done to produce optimal patient outcomes with an effective outlay of health care monies.

REFERENCES

1. Alcoholics Anonymous (2001). Alcoholics Anonymous, 4th Ed. Alcoholics Anonymous World Service.
2. American Psychiatric Association. (2000). Diagnostic and statistical manual of mental disorders - text revision. 4 Ed. Washington, DC:
3. American Psychiatric Association. Aziz, R. (1990). C.J. Jung's psychology of religion and synchronicity. New York: The State University of New York Press. Callahan, E. (1980).
4. Alternative strategies in the treatment of narcotics addictions: A review. In The addictive behaviours (Ed. Miller, W.) Oxford: Pergamon. Corsini, R.J., & Wedding, D. (1995). Current psychotherapies, 5th Ed. Illinois: F.E. Peacock Publishers, Inc.
5. Dos Santos, M. & Van Staden, F (2008). Heroin dependence recovery. *Journal of Psychology in Africa*, 18(2), 327-338.
6. Dos Santos, M.M.L., Rataemane, T.S., Trathen, B., & Fourie, D. (2010). An approach to heroin use disorder intervention within the South African context: a content analysis study. *Substance Abuse Treatment, Prevention and Policy*, 5: 13.
7. Einstein, S. (1966). The narcotics dilemma: Who is listening to what? *International Journal of the Addictions*, 1, 1-6.
8. Finnegan, F. (1995). The cognitive structure underlying heroin injecting behaviour. *Journal of Drug Education*, 25(3), 281-287.
9. Friedman, M. (1992). Buried alive: The biography of Janis Joplin. New York: Harmony Books.
10. Ghodse, H. (1989). Drugs and addictive behaviour: A guide to treatment. Oxford: Blackwell Scientific Publications.
11. Gossop, M. (2000). Living with drugs (5th Ed.). Aldershot: Ashgate Arena. Gossop, M. (2003). Drug addiction and its treatment. Oxford: Oxford University Press. Hayes, S.C., Barlow, D.H., & Nelson-Grey, R.O. (1999). The scientist practitioner: and research and accountability in the age of managed health care (2 Ed.). Boston: Allyn & Bacon.
12. Kaplan. J. (1983). The hardest drug: Heroin and public policy. Chicago: The University of Chicago Press.
13. Karam, E.G.; Yabroudi, P., & Melhem, N.M. (2002). Comorbidity of substance abuse and other psychiatric disorders in acute general psychiatric admissions: A story from Lebanon. *Comprehensive Psychiatry*, 43(6), 463-468.
14. Kenny, M. (1999). Death by heroin - recovery by hope. Dublin: New Island Books.

15. Kleber, H.D. (1981). Detoxification from narcotics. In Substance abuse (ed. Lowinson, J. & Ruiz, P.). Baltimore: Williams & Wilkins.
16. Kohn, M. (1987). Narcomania on heroin. London: Faber & Faber Limited.
17. Leggett, T. (2001). Rainbow vice: The drugs and sex industries in the new South Africa. Claremont: David Philip.
18. Leshner, A.I. (1999). Drug abuse and mental disorders: Comorbidity is reality. NIDA Notes, 14(4), 3-4.
19. Marlatt, A., & Gordon, J. (1985). Relapse prevention. New York: Guilford. Myers, B., & Parry, C.D. H. (2002).
20. Report on audit of substance abuse facilities in Cape Town. Cape Town: Medical Research Council. Pearson, G. (1987). The new heroin users. Oxford: Basil Blackwell Ltd. Robins, L. (1993). Vietnam veterans' rapid recovery from heroin addiction: A fluke or normal expectations? Addiction, 88, 1041-1054.
21. Rodrigues-Llera, M.C., Domingo-Salvany, A., Brugal, M.T., Silva, T.C., Sanchez-Niubo, A., & Torrens, M. (2006). Psychiatric comorbidity in young heroin users. Drug and Alcohol Dependence, 84(1), 48-55.
22. Rotgers, F., Morgenstern, J., & Walters, S.T. (2003). Treating substance abuse. London: The Guilford Press.
23. Strang, J., Griffiths, P., Powis B., & Gossop, M. (1997). How constant is an individual's route of heroin administration? Drug and Alcohol Dependence, 46, 115-118.
24. Stevens, A., & Rafferty, J. (1994). Health care needs assessment: The epidemiologically based needs assessment reviews. Oxford: Radcliffe Medical.
25. Teeson, M., Mills, K., Ross, J., Darke, S., Williamson, A., & Harvard, A. (2008). The impact of treatment 3 years outcome for heroin dependence: Findings from the Australian Treatment Outcomes Study (ATOS). Addiction, 103(1), 80-88.
26. Terry, C.M. (2003). The fellas: Overcoming prison and addiction. Australia: Wadsworth Thomson Learning Inc.
27. Vasile, D., Gheorghe, M.D., Civrea, R., & Paraschiv, S. (2002). Antisocial Personality Disorder - heroin dependence comorbidity. European Neuropsychopharmacology, 12, supplement 3, p. 392.
28. Vietnam & America: A documented history. (1995). New York: Grove Press. Winick, C. (1962). Maturing out of narcotics addiction. UN Bulletin on Narcotics, 14, 1-7.