Heroin Addiction and Related Clinical Problems
HEROIN ADDICTION AND RELATED CLINICAL PROBLEMS

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1. to promote the development and acceptance of treatment with methadone and other prescribed medicaments (buprenorphine, LAAM, heroin, naltrexone) including long-term prescribing;
2. to enhance the provision and quality of services to drug abusers and their families, especially heroin addicts;
3. to promote a better understanding of methadone treatment by the general public and its elected representatives and officials;
4. to promote collaborative research and to provide a European research centre;
5. to work with the American Methadone Treatment Association to promote support for methadone treatment worldwide;
6. to promote good will and cooperation among the staff of methadone and other medical treatment services in Europe and elsewhere, and, in pursuit of any of the foregoing objects, to obtain financial support from government.

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The problem of drug dependence

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Summary

Knowledge about psychoactive substances has always had to challenge sociocultural dogmas and expectations, which usually prevail over scientific evidence. Along with that, addictive disorders have mostly been thought to arise from a choice of inappropriate sources of stimulation and blame addressed at addicts who lack judgement. The definition and assessment of the differences between use, abuse and dependence have therefore been a controversial matter. Stimuli differ in nature and different dynamics are there for behaviours to be elicited and structured. Some objects are pursued along with the need for them, as soon as they become unavailable, whereas others are craved for most strongly when they are available. Behavioural dynamics are crucial in discriminating between what we struggle not to run out of, and what we strive to win, i.e. between loss avoidance and self-empowerment. Need-satisfying behaviours tend to dwindle through satisfaction, and develop through the experience of frustration, whereas pleasure-seeking is reinforced by success and is structured upon subjective reward. Both forms of behaviour are displayed as habits, and stay functional as long as control over behavioural production is maintained. The neurobiological bases for these conceptualizations are discussed, and clinical models are described to draw a line between physiological habits and addictive diseases, and between benign transient behavioural conditioning and the proneness to malignant relapse which underlies true addiction. The debate on addictive diseases, setting aside the question of resorting to irrational methods, should be referred to strictly medical

Key words: Drug Dependence - Addictive Behaviour -

The search for substances capable of improving the human organism’s performance, whether intellectual or physical, has always been driven by the human dream of surpassing one’s own limits. There are various substances or drugs which, by interfe-
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ing with specific organ functions, elicit responses that are conventionally defined as positive or negative according to the user’s expectations. The effect of a drug cannot in itself be classified as positive or negative; such terminology only makes sense in clinical practice, where the response to the drug is assessed on the basis of its effectiveness in preventing or curing a disease or one of its symptoms. It is, however, true that drugs capable of inducing euphoric feelings, assertive behaviours, states of alertness or deep sleep or of eliminating sensations of fatigue, exhaustion, shyness and physical or emotional pain can be evaluated as positive or negative in their effects either by a single individual or by a community, not on the basis of pharmacological criteria, but simply because they arouse interest or a rejection. A drug can, therefore, be evaluated according to pharmacological criteria, according to criteria of clinical practice or on the basis of personal or socioculturally oriented assessments. The first two assessment criteria spring from the biologist’s and doctor’s common interest in objective data and tend to overlap, whereas the third and fourth have a purely subjective and arbitrary dimension which must not be confused with that of the other two.

The difficulty of rigorously distinguishing between the different cultural and operative levels of these criteria is strengthened by traditions of shamanic medicine which survive nowadays in the form of alternative medicine, even in the most advanced western countries. As a result, even the most accurately worded definitions of transference and the placebo effect, or the experimental demonstration of the metabolic differences on which variations in individual response to a psychopharmaceutical drug are grounded, have had little impact on the shamanic interpretation of these phenomena, which is still widely favoured. At one time the origin of all disease was the object of confusion between physical and transcendental causes, so that the severe epidemics were defined as divine punishments and some patients, such as lepers, were considered to be expressions of demonic forces. Today, apart from the recent attempt to demonize AIDS which, thankfully, faded away when the virus responsible for it was isolated, it is primarily psychiatric patients who are still often denied the dignity normally accorded to the sick. The mythological interpretation of psychiatric illness by Thomas Szasz provides a persuasive interpretation of this situation which seems to arise from persistent confusion over criteria able to distinguish between objectively deviant behaviours and socially stigmatized ones; this confusion explains why those classified as mentally ill include - and may mainly consist of - those who fail to comply with the rules of the culture to which they belong [22]. On the other hand, the lack of objective criteria allowing a clear distinction between these two categories of “eccentric” behaviour makes it difficult to choose between the inductive generalization which condemns an anticonformist as mentally ill and that which deprives the mentally ill of their right to appropriate therapeutic intervention. In this context, a refusal to define a psychiatric patient as being ill sometimes takes on the same significance as a defence of individual rights. The fact remains that unscientific generalizations severely limit the right to treatment of those who are ill. The main aim of the ongoing search for a common language by psychiatrists and psychologists should be to get rid of all the sources of confusion which perpetuate this situation. The conflicts that still divide the
psychodynamic school of thought and the organic school only make sense as heuristic hypotheses that may be useful in studying the mechanisms that regulate behaviour. It is unacceptable that they should become the dogmas responsible for those false generalizations which undermine some fundamental human rights and which are actually only approximations made precise by arbitrary criteria. The discussion is complicated further when the topic at issue is drug dependence - a question to which a chapter is dedicated in various psychiatric tests and manuals, where it is located among psychiatric conditions arising from endogenous causes. In some cases, alcohol and heroin dependence have been called chronic psychiatric illnesses that are likely to lead to relapses (“once an alcoholic, always an alcoholic”).

Considering all that has been said so far, it is easy to understand why only a minority, even among psychiatrists, unreservedly accept such clear-cut terminology. Again one must quote Szasz [23], who begins his criticism of these assumptions by citing the meaning of the original English term ‘addiction’, which is defined in the Oxford English Dictionary as a devotion or dedication of oneself to something and, further exemplifying that, lists socially relevant occupations, useful reading material and, lastly, bad habits [23]. By now, ‘addiction’ has practically become a synonym for ‘dedication to harmful and illicit practices’ and, in the case of illicit substances, it has taken on the meaning of ‘behaviour that damages those that practise it and is socially inadequate’. As a result, it is not easy to conclude whether a definition of drug addiction (or drug dependence) as an illness has a socio-cultural valency or is grounded on biomedical presuppositions.

In an attempt to clarify this aspect of the problem, it will be useful to start with the Italian term ‘tossicodipendenza’, whose literal meaning is ‘dependence on toxic substances’. It defines a condition of intoxication which continues because the user cannot do without the intoxicating substance. Typically, the drug addict puts much of his energy into procuring the toxic substance on which he depends. The state of drug dependence exerts a strong hold over him; under certain conditions it displays the characteristic obsessive-compulsive form of behaviour known as ‘craving’. In this case the term tossicomania (‘mania for toxic substances’) seems more appropriate than tossicodipendenza. The term ‘dependence’ points to a condition of need in an organism or individual, for an external factor, but it does not necessarily include behaviours directed towards procuring it. Dependence can be innate or acquired. Human subjects have an innate dependence on all the nutritional factors that their body is unable to produce, including essential aminoacids, vitamins, essential fatty acids and mineral salts. In addition, various circumstances can lead to the loss of an organism’s capacity to synthesize insulin or another hormone, so triggering a primary acquired dependence on these substances. Habits are another form taken by acquired dependence. These are a set of current behaviours directed to repeating an experience that has turned out to be positive for the individual. The positive experience comes from a rewarding stimulus, whereas a punitive stimulus constitutes a negative experience. Moreover, the positive experience is the avoidance of a punitive stimulus. The behaviours of animals and humans are strictly regulated by the results that spring from them. Only behaviours that are the
outcome of positive experiences are repeated, that is, are learned. Negative experiences will be avoided, and behaviours directed to avoiding them will be acquired.

It must be stressed that rewarding stimuli are able to regulate an individual’s behaviour much more effectively than punitive stimuli. A habit is a current, well-structured behaviour that may become automatic, in the sense that it is enacted independently of an awareness of the results it will produce. These results may, in their turn, be experienced as events that are independent of the behaviours that produce them, so giving the individual an aura of omnipotence. Habits exercise a strong degree of control over an individual’s behaviour, and habits arising from a rewarding stimulus are much more effective than those arising from the avoidance of a harmful event. That is why it is easier to forget to take an antihypertensive medication in the morning than it is to forget to drink coffee at the end of a meal. The aim of the former course of action is prevention, that is, avoidance of a negative symptom that might materialize in the future; the latter action gives immediate pleasure. Not all forms of dependence have the same capacity to regulate a subject’s behaviours; acquired forms are often more effective than innate ones. There can be no doubt that the stimulus to eat and drink, like those arising from other physiological needs in the human body, exerts a very effective power to regulate an individual’s behaviour. Even so, to cite just one example, dependence on iodine, an element that is essential to the synthesis of the thyroid hormones, is not, by itself, effective. In reality, a lack of iodine leads to hypothyroidism, whose behavioural symptoms are indifference towards, and lack of interest in, the environment, including foods containing iodine - quite the opposite of the determination displayed in forms of behaviour due to attraction or avoidance inherent in habits. Only the acquisition of an awareness of the nutritional value of iodine, or a medical prescription, could trigger off a dietary habit able to direct individual behaviour towards attraction to iodine, in avoiding future harm. Thus a primary need succeeds in regulating an individual’s behaviour only when an awareness of that need manages to produce a habit. What has been said so far prompts the conclusion that the capacity to regulate behaviour exerted by a dependence is independent of the damage that may be produced by a lack of the dependence. In addition, even if it is true that a lack of iodine is not enough to trigger a craving for iodine, it is still true that the threat of an enforced interruption of any habit does not determine the same intensity in behavioural reaction as that needed to keep it going.

At this point, the problem that arises is that of the objective harm that may be produced by a lack of the dependence factor. If that factor is a hormone that is no longer produced by an organism, the endocrinological damage due to the insufficiency is easy to state in objective terms. If the factor lies outside the individual and constitutes a rewarding stimulus, so that its activation has allowed the habit to become structured, a lack of it, which will interrupt that same habit, will lead to a withdrawal syndrome. The sudden withdrawal of a substance that has become the object of abuse after a long period of use has special consequences both in animals and in humans. Vincent P. Dole defines addictive substances as those whose consumption is independent of their price [5]. These substances comprise heroin, tobacco and alcohol, but also crude oil and its
by-products, because contemporary society has become dependent on these sources of energy, just as an alcoholic is dependent on drink. The price paid must be calculated not only in monetary terms, but also in terms of loss of health, personal freedom and social standing in the community. The power possessed by certain substances in regulating an individual’s behaviour is often greater than the control that is usually exerted on him or her by these social values. That is why a tobacco addict is willing to risk a second infarction as long as he can smoke his next cigarette, why the alcoholic goes on drinking despite a diagnosis of a pre-cirrhotic condition, and why a heroin addict goes out to buy heroin even if this means risking serious legal penalties. The fear of the harmful consequences that a lack of oil supplies would cause a nation that depends on imports of this fuel sets in motion the most extreme reactions; these aim to forestall any threat of a breakdown of fuel supplies. Any assessment of the economic role of such reactions must be left to sociologists and historians, but an assessment of the cravings of a tobacco or heroin addict suddenly deprived of access to the craved-for substance is a task for doctors. It is doctors who must determine if the dependence on a toxic substance exerts total control over the behaviour of an individual who is deprived of it. If this were not so, then behaviours caused by such cravings, whatever form they take, could not be considered withdrawal symptoms. In other words, they would not be subject to the absolute need for enactment that distinguishes phobic and obsessive-compulsive behaviours and that makes out the stereotypes of psychosis. In fact, several psychiatrists have defined and classified the acting out of a heroin addict during withdrawal [15; 19] as reactions of a psychotic type, while craving itself has been assimilated to a phobia [29] on account of its control over behaviour. In any case, evaluations such as “What he needs is more will-power” or “If only he really wanted to stop...”, which presuppose the conscious choice of a given attitude rather than its inevitability, derive from a non-medical interpretation of craving. Such attitudes view the addict as someone who is only pretending that his aberrant attitudes belong to a pathological condition. If only a pretender, he would at every stage be completely responsible for his actions. As a result, if those actions are illegal, he will simply be classifiable as a criminal, given that his addiction would not be the reason for his emotional and behavioural reactions. Considering that psychiatrists do not completely agree even about whether some neurotic symptoms inevitably lead to given courses of action, it must be admitted that at the moment it is not easy to decide the question of the addict’s responsibility for his behaviour during withdrawal.

It therefore appears to be well worth reflecting on the capacity that addictive substances have to interfere with the neuron mechanisms that underlie brain functions such as perceptions of pleasure and pain, whether these are physical or emotional, and on their capacity to produce lasting changes in the functional capabilities of these cell structures. Knowledge in this area could yield answers to several problems that are still open. Nuclei in the brain that are anatomically well-defined [2; 25] both in laboratory animals and in man have the main function of producing sensations of pleasure. They are called “reward centres” and are located in the limbic system - that complex of brain structures which first appeared in the brain of the lower mammals and whose
role is that of presiding, in an integrated way, over the functions that are connected with the preservation of the individual and the species [16]. For example, to guarantee the preservation of the species, a stimulus is needed to induce an animal to mate. This stimulus is sexual pleasure; sex without pleasure would mean the extinction of any animal species, because no rat or elephant would be induced to mate if this was not accompanied by an immediate reward. The sexual function is connected with the reward centres; the same is true of the feeding function, of aggressiveness, and so on. These centres are also connected with nuclei that have other functions; the external stimuli that activate these nuclei and, therefore, indirectly, the reward centres, will be classified as “pleasant” and, as such, worth renewing to allow renewal of the pleasure. This mechanism underlies behaviour whose effects are attractive, in the sense that sounds, situations, images and people may turn out to be rewarding. The reward that derives from a behaviour makes it reassuring and transforms it into a pleasant custom or a habit. The linkage between a reward and a behaviour may, however, appear to conflict with some of the functional connections that are considered physiological for an animal or a primitive individual. Thus, chastity in human beings may, paradoxically, become more rewarding than sexual experience in a cultural context that considers the former superior to the latter, independently of the fact that avoidance of sexual intercourse may mean avoiding physical harm.

Various physiological functions which, in themselves, are rewarding are repressed out of deference to good manners, whose rules - for those who apply them in the right setting - allow a role that is, on the whole, more rewarding than the single pleasures that are foregone. The stimulation of the reward centres leads to learning, which begins with the unimaginative repetition of the actions that immediately preceded that reward. The efficacy of such stimuli on the learning process depends on their intensity and on the consequent activation of neurons. In the last analysis, it is determined by the amount of neurotransmitters that reach the synaptic target [25]. The refinement of the resulting behaviour will be enhanced by the progressive affirmation of acts directly connected with the rewarding effect; this is not true of acts that are only temporarily connected with it. Stimulation of the reward centres presupposes an effective stimulus - one that is able to reach the excitability threshold of the neurons that comprise it [6; 7; 26; 27]. Depending on its effects on neuron functionality, a stimulus may prove to be directly rewarding if it is able to induce the polarization of a sufficiently high number of neurons; it will favour a future reward if its only effect is to lower the threshold of neuron excitability, so facilitating the effect of another stimulus; and it will be inhibitory if it raises the threshold of neuron excitability. The best known centres are located in the area of the limbic system lying between the nucleus accumbens and the frontal mesolimbic cortex [17]. These areas, which contain various kinds of neuron systems - most prominently the encephalinergeric ones - are the terminal locus of the dopamine-containing neurons that derive from the ventral tegmentum of the mesencephalus [7]. It seems that the intensity of the rewarding sensation can be positively correlated with the quantity of dopamine that is freed, especially in the nucleus accumbens [4]. The reward centres can be directly stimulated by an electric current, provided it is strong enough, transmitted by applying an electrode to the ventral tegmentum, or to
the areas where the dopaminergic neurons terminate, or to the ventrolateral nucleus of the hypothalamus, which is crossed by the median bundle - the bundle containing the dopaminergic neurapses - of the proencephalus.

As happens with an environmental stimulus, the intensity of the reward experienced by the animal is a function of the degree of neuron depolarization and, therefore, of the intensity and duration of the transmission of electric current. A maximum stimulation will ensure the greatest reward and complete control over an animal’s behaviour. An animal will display the greatest commitment to repeating any environmental circumstance linked with the moment of that sensation, in an attempt to repeat its pleasure. By using this mechanism, the most complex behaviours can be induced in a laboratory animal. Effects that overlap with those induced by an electrode are obtained by injecting the neurotransmitters that mediate the reward, or pharmaceutical compounds that reproduce their action, directly into the reward centres through a microcannula. The most effective substances are dopaminomimetic compounds [12], which are injected into the nucleus accumbens, and the encephalins, which are injected into the ventral tegmentum or the accumbens [12]. Their effectiveness is dose-correlated, and there is a cumulative effect between the two neurotransmitters or their analogues [10; 20], or between either of these and an electric stimulus [20]. In other words, the effectiveness of single substances administered at subthreshold doses and that of subthreshold electric stimulation can add up, leading to an excitement-inducing response. The capacity to stimulate the reward centres as a direct or indirect result of freeing up dopamine, or affecting its metabolism in the limbic area, is the feature shared by all the psychotropic compounds that are called ‘addictive’. Whether in animals or in human subjects, they are all able to induce rewarding sensations and, therefore, behaviours that are actively directed to a repetition of the rewarding effects; in other words, they are substances that are able to induce a process of abuse, or non-medical use.

Cocaine and metamphetamine are two of the drugs that are most effective in stimulating the reward centres; like all central stimulants, they act directly on the neuron mechanisms able to free up dopamine [1; 3; 24] and the intensity of their effect is linked with the liposolubility that facilitates their penetration into the central nervous system. In terms of its rewarding capacity, the drug that comes second to the central stimulants is heroin, or, more exactly, the whole group of opiates that are antagonists of the \( \mu \) and/or \( \delta \) receptors; in their case the mechanisms are less direct and more complex - possibly, more effective in conditioning the relationship between the individual and his or her environment. In fact, an opiate’s effectiveness in providing a reward is made more sophisticated by its capacity to attenuate all unpleasant sensations of emotional type, so that they tend to vanish [11]. Under the acute effects of heroin, everything that happens in the surrounding environment is clearly perceived, but no stimulus retains its capacity to induce intense sensations, or forms of emotional involvement. The repeated use of heroin turns into a refuge from any physical, interpersonal or existential problem. Heroin becomes a filter that eliminates all that is capable of making someone feel anguish; more precisely, it eliminates anguish, but not the reason for that anguish. It allows a detached vision, with a new perception of reality, which is experienced
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in an anxiety-free domain, where the constraints arising from a fear of the possible consequences of any behaviour disappear. In addition, the continual stimulation of the brain nuclei on which the addictive drugs act tends to gradually raise the response threshold, so inducing tolerance. That tolerance is not limited to the drug itself; if the drug acts through dopamine, the tolerance will include any rewarding effect mediated by dopamine, independently of the nature of the inducing stimulus. In this phase, the substance is not only utilized to reproduce the original rewarding effect, but also to ensure the dopamine concentration in the synapsis required for a correct response to normal external stimuli. Abstinence from central stimulants, if we set aside any psychotic complications that may be induced, will be characterized, above all, by a rise in the response threshold to what are usually pleasant stimuli. Abstinence from heroin also produces a corresponding lowering of the pain threshold. Pain will be perceived more acutely and extensively. The slightest physical or emotional trauma will turn into unpleasant sensations of intolerable intensity. The heroin addict lives in continual terror of this condition, and in a desperate search for normality or emotional anaesthesia.

The state of the art in the physiology of reward systems allows us to explore the mechanisms that regulate our behaviour, and the evolution of our habits or dependences. The concept of ‘habit’, and, therefore, dependence on a drug comprises the factor “modification of the stimulation threshold in these centres”. The drug produces a reward and, if its effect had not yet reached a maximum, allows a further stimulation of the reward centres; but without it, that is, during a withdrawal phase, the stimulation threshold of the centres rises, to a degree depending on the type of drug and the dosage reached. The changes induced by some drugs in these mechanisms may show a pattern revealing incipient lesions and, therefore, intoxication and illness. This is the starting point of the anaedonia that characterizes withdrawal from cocaine, and it displays the same features and has a cluster of symptoms analogous with those found in spontaneous depression [9; 21]. Anaedonia deriving from cocaine is produced by the same mechanism which underlies the insecurity and difficulty in paying attention that induce the mild dysphoria of the abstaining smoker; the only difference is quantitative - the amount by which the threshold level rises.

It may be concluded that an addictive substance controls an individual’s behaviour by producing reward; if, over time, it is able to modify the threshold of the reward system, it comes to exert a twofold control, because its use determines both a pharmacological restoration of the equilibrium of the reward system, and the reward itself. Which of these two aspects is predominant in determining the behaviour of the abstaining drug addict is a topic of extreme theoretical interest. In fact, while it is true that rewards are normally more effective than punishments in regulating an individual’s behaviour, in the sense that the former are more likely to lead to a habit, it is also true that the response to both these stimuli may take on a pathological character; in this case they are equally effective. As a result, it is almost impossible to decide whether the control exerted by an avoidance behaviour that takes on a phobic character is stronger than that exerted by an attraction behaviour that takes on a compulsive character. A craving, or compulsive
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search for a substance as a source of pleasure, has been defined as the mirror symptom of phobia [29]; in so far as it is a search for relief from an unbearable symptom, it is, in itself, an avoidance behaviour, but in so far as it is uncontrollable, it is a compulsive behaviour. Those who support the view that drug addiction and dependence are the results of an autotherapeutic attitude often confuse the craving symptom with the cause that leads to the first encounter with heroin or alcohol.

The craving symptom, which suggested that in some cases tossicomania (‘mania for toxic substances’) might be a more appropriate term than tossicodipendenza (‘dependence on toxic substances’), marks out the first phase of withdrawal, which, in any case, may last for months, especially if it is lived out in a setting that is capable of evoking conditioning symptoms. In the remission phase, however, which may last for decades or just a few days, the compulsive-obsessive behaviour of the toxic substance addict fades both in the tobacco addict and the heroin addict. This fact has two results: it calls into question the hypothesis of dependence on toxic substances as a metabolic lesion determined by the long-term use of a drug, and, alongside that, it proposes a discriminating criterion for dividing substance addicts into curable and incurable. It certainly introduces the concept that the elimination of addictive behaviour, however it is achieved, corresponds to a clinical recovery from substance addiction. In the relapse phase, which is a feature of every form of substance addiction, the compulsive-obsessive behaviour of the addict is reinstated in a time-period that is extremely short compared with the times required for the initial development of substance addiction; this rapidity is a normal feature of the reacquisition of an active form of conditioning that has been eliminated. The etiopathogenesis of this clinical picture is easily explained as a situation of hypersensitivity - already acquired by the organism - to the addictive substance. There are, in fact, many analogies between the clinical course of allergic illnesses, where a memory of the symptom is retained in the immune system, and substance dependence, which, even after years of remission, may reappear in full force after a very short-lived contact between a drug and a central nervous system that has been made sensitive at a much earlier stage. The remission phase is, therefore, a condition carrying a high risk of relapse into a state of substance dependence. The real cost of a glass of wine to an alcoholic in the remission phase far outweighs the outcome of an occasional binge in a diabetic. It is hard to argue that the motivations underlying these health transgressions are different, but there does appear to be an objective difference in the real chance of controlling the consequences of each of these two behaviours. In fact, a diabetic, while remaining within his personalized therapeutic regime, has dietary limits that fall within average dietary habits, and these are not upset by an occasional, reasonable, transgression. To stay in remission, a drug addict has to respect a rigorous abstinence; the slightest transgression can determine a relapse. The divergence is so sharp that several doctors have wondered whether the two conditions are comparable.

Even if these issues arouse strong feelings, they have a mainly theoretical and speculative character with respect to a doctor’s practical need to give patients a concrete answer. They have much heuristic significance and, one hopes, will eventually provide
a definitive answer to the problem. In searching for a solution, it is worth recalling that the substance addiction sector of medical science has the empirical aim of ensuring the individual’s well-being. It follows that the right kind of answer to these issues is pragmatic, rather than the outcome of theoretical quibbles; this is the way to avoid therapeutic proposals of an ideological type. What should be done, then, in facing the practical problem of the drug addict who lives in a state of chronic addiction, without any real ability to interrupt it, or prevent relapses? What should the doctor’s role be in treating this kind of patient? It should be recalled that 90% of the patients who have stopped smoking [8], and a similar percentage of alcoholics [18] have achieved this by themselves. Statistics on heroin are harder to obtain; but considering that only 15-20% of them apply for help to public health structures [14], it may be concluded that a majority of these subjects too get rid of their habit by themselves. It might be deduced that the true drug addicts are those who fail to stop even with medical help, and that those who stop by themselves have not given such a deeply structured form to their dependence. An alternative conclusion would be that the true substance addicts are those who stop by themselves, whereas the others have basic psychopathological problems that complicate their condition and make the breaking of their dependence difficult, if not impossible. This second hypothesis is particularly welcome to those who consider substance dependence a form of autotherapy [28]. But there are those who warn that it is dangerous to identify the cause of the symptom in the substance addict’s need for the drug, and stress that writing diatribes on this topic is like arguing over whether the chicken or the egg came first. These issues too, if argued over excessively, lose their original practical status and remain unresolved. Supporting one side or the other on these issues does not mean giving an answer, because giving an answer does not merely mean satisfying someone who supports one side, but, above all, alleviating or bringing to an end the addict’s subjection to toxic substances. When an addict turns to a doctor for help, he or she is, in fact, more or less consciously asking to be freed from the symptoms and problems that the uncontrollable use of the drug imposes. If patients could choose their cure, in most cases they would ask for an antidote that would allow their acquired habits to continue, without the symptoms that continually harass them and/or cause them physical insufficiencies. Smokers would ask to continue smoking while being freed from cardiovascular and bronchopulmonary symptoms; alcoholics would ask to be allowed to drink without appearing to be inadequate or bad-tempered, and without suffering from digestive and hepatic conditions. Heroin addicts would ask to be allowed to enjoy their heroin for a few hours a day, as happened at the beginning of their experience, without appearing to be intolerant and dysphoric, and without being constantly bothered by an always immanent withdrawal syndrome. All of them would ask to be freed from the control exerted on them by their craving for an addictive substance. Drug addicts, for example, dream of experiencing their addiction as a pleasant habit, which may sometimes become predominant with respect to other habits - habits which, for other people, might involve a sport, a job, the arts, good cooking, and so on. Doctors do not always have an effective antidote at their disposal; but they should avoid proposing ideological or mystical surrogates for a therapy which medicine does
not yet possess. They should view heroin addicts as affected by an illness induced by the prolonged use of heroin, and treat the addictive symptoms with the means that are available, without blaming patients for any inadequacies the prescribed remedies may have or for their state of addiction to heroin. A trumpet player suffering from pulmonary emphysema does not apply for in-patient treatment to stop playing his instrument, but to recover enough respiratory efficiency to allow him to resume playing. A doctor will know that playing the trumpet will shorten the life of the trumpeter, and will have to give him that information, even if he already knows the reply. The relationship between these two men will, in any case, always be correct and will be sustained by the fact that this will be a confrontation between equals. In the same way the doctor knows that there are no antidotes for tobacco and his prescription to a patient who is a tobacco addict will be to stop smoking. A doctor can do more; he can organize campaigns against smoking and be dedicated to providing information at grass roots level on the harm done by tobacco, in the conviction that prevention is better than a cure. But he will never refuse to cure a smoker who continues to smoke, and who consequently suffers and asks for help. What are, emotionally, the most intense relationships between a doctor and a patient often involve patients of this sort because, in trying to convince them they should give up smoking, he himself may become involved in the paradoxical arguments used by smokers to defend their habit. Naturally, no emotional involvement occurs if a doctor has a specific competence in psychotherapy. On the other hand, psychotherapy alone, in its various expressions, has always had disappointing results in structural forms of drug dependence [13].

The relationship a doctor sets up with a confirmed smoker is often more easy-going than that with an obese patient. In contemporary society a smoker plays the role of an adult, which presupposes respect, and in the last analysis, acceptance. An obese person who is excessive in his eating habits is perceived as being greedy, and displays behaviours considered typical of childhood; he is often treated with a more severely commanding attitude than that used towards a smoker. A similar attitude is adopted towards an alcoholic and, depending on the setting, a clearly critical attitude is sometimes taken up where alcoholism is not so widespread as to be socially accepted. In general, criticism takes the form of absolute rejection, by doctors as well as by others, in dealing with those addicted to illegal substances. A prescription that the use of the substance should stop at once is sometimes given as a precondition of therapy, and this approach is often adopted not only by doctors, but by all those who claim to be experts on forms of dependence on harmful substances. This attitude clashes with what has been noted so far: if patients were able to stop using harmful substances simply in response to a request by a doctor, they would not have become addicted in the first place.

The fact that the use of a substance is illegal is not a medical problem, and if a doctor experiences it as being medical, by targeting it as a toxic factor or a disease, he is giving up his professional status from the outset. A doctor’s interest and his therapeutic intervention should exclusively aim to cure the toxic effects produced by the abused substance, and those of any associated pathologies; this is so independently of whether those effects existed before addiction, or started afterwards, or were the result
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of addiction. Any other factor that comes to interfere with the attitudes or judgment of a doctor will be a sign of his or her regression into the sphere of a medical operator incarnating religious morality or magic rites, or a power to distinguish between good and evil. The categories of positive and negative, good and bad, and beautiful and ugly do not belong to medical science, cures, illnesses or patients. If these categories are used to classify patients, this will mean subjecting them to rules which, even if they have turned out to work in situations that have arbitrarily been considered similar to some medical conditions, in reality are completely extraneous to those patients, qua patients. Attitudes of this type are like those found in racial prejudice. A heroin or cocaine addict may need a doctor on the same basis as a tobacco addict. If that happens, it is to be hoped that the drug addict finds a professional who has an antidote at his or her disposal, and is willing to prescribe it without any misgivings, the aim being to allow the patient a regulated use of that antidote, without any time limit. Only a doctor who adopts such a pragmatic attitude will be able to set up a correct relationship with the patient - a relationship not vitiated by prejudices or reserves that reduce the efficacy of any form of intervention directed to strengthening the natural rejection by the patient of the harmful substance, or that tend to polarize the dependence symptom in directions applied to cases of transgression.

References


Received March, 25, 2001 - Accepted July, 15, 2001
Evaluation survey of a Methadone Treatment share care programme between a specialized clinic and a network of GPs

Anne Coppel¹, J.F. Bloch-Laine¹, Y. Charpak² and R. Spira²

Summary
Emergence Espace-Tolbiac is a methadone treatment clinic. Over the last 5 years, EET has initiated methadone treatment with 738 patients, including 548 who have been referred to a network of 220 GPs. The way of service functions is defined by the French regulations for methadone treatment. Such treatment must be initiated by specialized clinics, but once patients have stabilized, can be referred to GPs. Our service initiates the treatment, and patients stay at the clinic, where methadone is administered every day by a specialized team. During the first few weeks, the patient’s needs are evaluated and he or she is referred to various professionals, such as social workers, doctors and psychiatrists, according to whatever is appropriate in each case. Patients are referred to GPs when the evaluation is made that they no longer abuse drugs such as heroin or cocaine, or other substances such as alcohol or benzodiazepine. They must have social resources and available accommodation. Patients suffering from a psychiatric disorder do not receive referrals until their condition has been stabilized by any kind of treatment. So far 40% of our patients have received a referral after an average of 2 months at the clinic, and 30% after an average of 9 months, while 18% have stayed at the clinic for over 2 years. A follow-up has been conducted on 296 patients referred to GPs (32 GPs failed to answer). After an average of a year and a half on treatment, 5% were no longer available for follow-up, and 85% are still being advised by their GP. Of these, 95% are still being treated with methadone. Most of the others (9/13), are being treated with high-dosage buprenorphine (Subutex). The mean dosage is 60mg/day, 15 mg less than at the end of the stay at the centre. Relationships with other professionals are frequent (67% of patients). 20% are still in contact with the centre.

Key words: Methadone Treatment - GPs network

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Research Report

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The Emergence Espace-Tolbiac programme began in June 1995. The choices we made were determined by the Paris context. At that time GPs were not officially allowed to prescribe substitution treatments. Methadone had been recognized as a substitution treatment in April 1995, subject to a regulation that only specialized services could begin treatment with methadone. These services might, however, refer a patient to general practice if they considered that the patient’s condition had been stabilized. The Ministry of Health had not wanted GPs to prescribe methadone in the first place, because it considered that a prescription of methadone required specialized knowledge. One of the reasons given was the risk of overdose. For prescriptions in general practice it was decided to use high dosage buprenorphine (Subutex); this received legal sanction in January 1996.

In June 1995, however, several Paris GPs found themselves dealing with many patients who obviously needed access to methadone. These doctors had begun substitution treatments during the 1980s, using low dosage buprenorphine (Temgesic). When patients were unable to stabilize with Temgesic they used morphines, which, in principle, are reserved for the treatment of pain (Skenan / Moscantin). It is difficult to say today why stabilization through the use of Temgesic proved unsatisfactory, or whether dosages were inappropriate. The fact remains that these patients achieved stability more satisfactorily by using morphine, and they should therefore have been given access to treatment using methadone. The number of patients then being treated with morphine was estimated at between 2000 and 3000 in the Paris region alone.

We therefore chose to work in collaboration with a network of these doctors, most of whom had had several years of experience with substitution treatments. We considered that our role was to stabilize the patient and then refer the patient to his or her GP as soon as the patient was able to cope with the treatment without our direct help. Past experience of substitution treatment in medical practice showed that a proportion — as yet unknown — of patients do not need the kind of daily care that is provided in a specialized unit. It also showed, however, that certain patients had needed sustained care by a multidisciplinary team (medico-psycho-social). After reflection, our working hypothesis was that some patients might benefit from specialized care over relatively short periods with clear objectives, such as access to secure housing, or giving up the use of drugs by injection. We therefore chose to individualize treatment periods in the specialized unit, in line with the patient’s progress.

Given the situation in Paris, we wished to refer patients to general practice quickly, whenever possible.

We adopted the following criteria:
- Stabilization in terms of dosage, which, if there are no other problems, can be achieved rapidly (in one week).
- Control of legal and illegal psychotropic drug abuse: alcohol, psychotropic medicines, cocaine and other drugs.
- Social stabilization: either access to social security resources, which may include a job, or social security benefits (the minimum social security
benefit, a pension or other benefits).
— Absence of major psychiatric disorders.

The needs of employed patients could be met more quickly. We also took into account the patient’s relationship with the GP. Some poorly stabilized patients, patients with psychiatric disorders, or those suffering from multiple drug addiction, were dealt with more quickly if the GP was willing to take on the responsibility, and had a good relationship with the client and an experience of patients with drug addictions.

Considering the whole of 1999, we began methadone treatment on about 800 patients, that is, over 10% of all patients treated with methadone in France (7,500 patients).

A survey was conducted by Dr. Charpak (EVAL) among GPs in 1997, on cases where one and a half years had passed since they had taken over responsibility. Eighty-eight doctors were questioned about the progress of 239 patients.

The profile of patients was comparable with that of other patients treated with methadone in France: 67% were men and 33% women, with an average age of 36; 25% lived alone, 44% cohabited, and 23% were living with their families. 93% had a fixed abode (patients are not referred to general practitioners if they have no fixed abode). 34% had a job when they were referred to their doctor (Table 1).

<table>
<thead>
<tr>
<th>Table 1. Socio-economic background</th>
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<tbody>
<tr>
<td>Age (M)</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>Sex (Males)</td>
</tr>
<tr>
<td>Home circumstances</td>
</tr>
<tr>
<td>single</td>
</tr>
<tr>
<td>cohabiting</td>
</tr>
<tr>
<td>living in family</td>
</tr>
<tr>
<td>institution</td>
</tr>
<tr>
<td>missing</td>
</tr>
<tr>
<td>Housed</td>
</tr>
<tr>
<td>yes</td>
</tr>
<tr>
<td>no</td>
</tr>
<tr>
<td>missing</td>
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<tr>
<td>Financial resources</td>
</tr>
<tr>
<td>employment</td>
</tr>
<tr>
<td>benefits</td>
</tr>
<tr>
<td>family</td>
</tr>
<tr>
<td>no resources</td>
</tr>
<tr>
<td>missing</td>
</tr>
</tbody>
</table>
Heroin Addiction and Related Clinical Problems

From a physical point of view, 22% were HIV-positive (52), 64% HIV-negative (154), and 13% unknown (33), 110 were hepatitis-positive and 62 unknown.

The first result of this survey is the rate of retention (patients still monitored one and half years after going into care). 92% (222) were still under treatment by doctors and 88% (211) were still being treated with methadone. Two patients were under treatment with Subutex, three with a morphine sulphate, and two had been disintoxicated.

In all, 12 patients had given up treatment (nine dropouts, one death and one relapse) (Table 2).

<table>
<thead>
<tr>
<th>Table 2. Retention rates</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients still in treatment</td>
<td>222</td>
<td>92.9</td>
</tr>
<tr>
<td>Patients on methadone treatment</td>
<td>211</td>
<td>88.3</td>
</tr>
<tr>
<td>Patients no longer on treatment</td>
<td>9</td>
<td>3.8</td>
</tr>
<tr>
<td>Patients on &quot;Moscontin&quot; or &quot;Subutex&quot; treatment</td>
<td>3</td>
<td>1.3</td>
</tr>
<tr>
<td>Patients who had died</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>Detoxified patients</td>
<td>3</td>
<td>0.8</td>
</tr>
</tbody>
</table>

These results are comparable with those obtained in our unit. The results confirm our clinical experience by proving the feasibility of treatment by general practice.

The duration of treatment at Emergence Espace-Tolbiac is extremely variable (Table 3).

61 patients (37%) were referred to general practice following a single consultation. Various criteria justified this rapid referral:

— patients already under general practice treatment and already satisfactorily stabilized; patients with jobs and without any other special difficulties;
— patients living a long way from Emergence, for whom monitoring on a daily basis is ensured by the GP and the pharmacist;
— patients suffering from a physical pathology, those unable to travel, and so on.

These are the patients who had been referred to general practice, but 25% of those staying in the centre had been under care for more than two years in 1998. The latter were faced with at least one of the following problems:

- multiple addiction (alcohol, medicines, cocaine...)
- social alienation
- psychiatric disorders.

These patients require care over a long period. In the case of patients who show...
strong social alienation, like those with multiple addictions, we achieve positive progress through long term care. Psychiatric disorders are a major obstacle for which we try to organize double care, together with the psychiatric sector.

For the evaluation of drug use while under general practice care, questions were asked about drug use during the previous month.

The main results were as follows: 67% of patients were not using heroin; 9% were using it occasionally, and 7% every day.

68% were not using cocaine and 5% were, while the doctor had no information about 26% of cases.

Crack is only rarely used; it is a problem for 2% of patients.

Lastly, 67% of patients no longer take drugs by injection.

It must, however, be noted that doctors do not use urine analysis. This may mean that cocaine use, for example, is underestimated. However, patients with a major cocaine problem are not usually referred to general practice.

As to alcohol consumption, 46% of patients do not drink, 24% drink regularly, and 20% have alcohol problems (Table 4).

As to changes in patients’ social situation, progress was relatively slow. In some cases there were rapid changes at the beginning of treatment, prior to referral to general practice, after which the situation remained stable. This was the situation with housing and long-term shelter, or with returning to work in the case of patients who were previously employed. As regards financial resources, 54% of situations remained unchanged, 19% had improved situations, and 14% were in a worse situation. In the case of those who were employed, jobs were usually kept, which was a good result in itself. Those who had never worked found it very difficult to find jobs. Worsening financial situations mainly involved those in irregular jobs, who alternated between good and bad times.

One of the important results of the survey is the GPs’ involvement of other health care professionals. 61.25% of patients were referred to another professional, including 17.7% to psychiatrists, 12.65% to social workers, 7.85% to dentists (which, however,
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is too low a proportion), 9.5% to infectivologists, and 8.75% of patients are referred to a drug addiction specialist who ensures double monitoring.

| Table 4. Drug use last month, after one and a half years |
|----------------|----------------|
|               | N   |   %  |
| Injection     |     |     |
| yes           | 38  | 15.9 |
| no            | 161 | 67.3 |
| missing       | 40  | 16.8 |
| Heroin        |     |     |
| yes           | 48  | 20.3 |
| no            | 150 | 62.6 |
| missing       | 41  | 17.1 |
| Cocaine       |     |     |
| yes           | 12  |  5.0 |
| no            | 163 | 68.4 |
| missing       | 64  | 26.6 |
| Alcohol       |     |     |
| moderate drinker | 57  | 24.0 |
| heavy drinker  | 46  | 19.2 |
| abstainer     | 110 | 46.0 |
| missing       | 26  | 10.8 |

The involvement of various health care professionals bears witness to better access to both physical and psychiatric health care. It also shows that doctors are not isolated, and work in a network with other professionals (Table 5).

We consider that these results justify the choices we made at a general level. Referral to general practice is desirable, and the results obtained are comparable to good programmes of methadone treatment. In considering these results, the following factors must be taken into account:

1) The duration of treatment in the centre and referral to general practice are not unconditional; they are based on clinical criteria. Some referrals may have been premature, others unnecessarily long, but a clinical survey requires other means. In particular, it is impossible to know what results might have been obtained without treatment in a specialized unit.

2) The network of doctors we are working with is particularly experienced; many of these doctors have had patients under substitution treatment since the end of the 1980s. In addition, they are organized in networks that offer training. These, then, are motivated doctors who are prepared to devote a large part of their time to their patients and who all work in a network with various specialists.

In a more general way, the results we obtained in France with substitution treatments
A Coppel et al.: Evaluation survey of a methadone treatment share care programme between a specialised clinic and a network of GP's

must largely be attributed to the mobilization and involvement of GPs. Between 1994 and 1998 the reduction in fatal overdoses was 70%, and this figure indirectly reflects the improvement of health and lower mortality in drug-addicted patients. This corresponds precisely with the years of growth in substitution treatment (that is about 80,000 patients under Subutex treatment and 7,500 under methadone treatment at the end of 1999). During these four years the situation of drug addicted patients has changed radically. These patients were formerly rejected from hospital units as a matter of course. Today there are specialised teams in hospitals for taking patients into care. Of course progress remains uneven according to place, but now drug addicts do have access to care, which is also reflected in the fall of numbers of deaths from AIDS (this can be stated, even though we do not yet have any precise figures).

In assessing results of substitution treatment, context and the quality of professional practice, which are difficult to evaluate, are rarely taken into account. From the point of view of context, we would certainly not have obtained such results at the time of a steep rise in heroin use, such as that occurring in the 1980s. Another contextual element is the advent of treatment for HIV, which certainly motivated drug users to take more care of themselves. Professional practice seems to me to have played a major part, which is not entirely reassuring: doctors mobilized at a time when the situation of patients was very serious, and at which substitution treatment had to be introduced and people convinced of its usefulness. Today these treatments have official status, and drug addicts have

<table>
<thead>
<tr>
<th>Table 5. Referral to various professionals</th>
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<tbody>
<tr>
<td>Psychiatrist, psychologist, psychoanalyst</td>
</tr>
<tr>
<td>Drug Addiction Specialist</td>
</tr>
<tr>
<td>Social Worker</td>
</tr>
<tr>
<td>GP</td>
</tr>
<tr>
<td>Dentist</td>
</tr>
<tr>
<td>Gastroenterologist</td>
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<tr>
<td>Invectiologist</td>
</tr>
<tr>
<td>Internist</td>
</tr>
<tr>
<td>Other</td>
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<tr>
<td><strong>TOTAL</strong></td>
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become patients just like other kinds of patients who do not justify any particular effort. It is quite possible that in the years to come we may find it difficult to maintain such good results.

References


Received April, 15, 2001 - Accepted July, 25, 2001
Treatments of substance users detainees in "La Santé" prison

Saadia Yakoub

Summary
In France, care for addict detainees is provided under Ministry of Health responsibility. The psychiatric, psychological and social aspects depend on the Treatment Centre for Addicts in jail (created in 1987). In this report, on the basis of the characteristics of our patients in 1999, we describe the treatments given to substance-user detainees in our Centre at La Santé prison.

Key words: Substance-User Detainees - Substitutive Therapy

The population of La Santé prison comprises 1,300 detainees, but there were 3,500 newcomers last year. There is a very high proportion of foreigners: they come from 82 nations, and currently amount to 62% of all the detainees held there. Many of them have been imprisoned for offences linked with drugs, and, in the case of foreigners, for staying illegally in France.

Under Ministry of Health responsibility, care for addict detainees in France depends on the medical wards in prison, whereas psychiatric, psychological and social care all depend on Treatment Centres for Addicts. The staff of our Treatment Centre comprises one psychiatrist, who is responsible for the follow-up and the start of substitution treatments, three psychologists, who are responsible for psychotherapeutic follow-up and preparation for the patient’s release, and one social worker.

The work done by our team relies on weekly psychological interviews, which proceed along a number of different axes:
— psychotherapeutic follow-up to prevent relapses, raise awareness and reach a better understanding of the psychological mechanisms linking the patient with the product, by referring to his individual, familial, social, cultural and environmental history and problems. This follow-up includes patients on substitution treatments;
— preparation for the patient’s release: in partnership with the various teams in prison, who are closely linked with the external networks on health, rehabilitation and justice.

We also provide: (a) meetings to allow information to circulate between patients and the network, so that patients get to know the health and social systems; (b) individual interviews, on a monthly basis, with a professional in the rehabilitation field or at a treatment centre; (c) individual interviews, on a monthly basis, where a lawyer gives advice to foreigners who are due to be expelled from the country; (d) personalized interviews, before release from prison, to arrange an initial contact between the patient and a professional from a facility where he will be admitted; (e) an interview for a one-day permission to leave prison and visit a treatment centre; this may or may not be authorized by the judge at the prison.

It should be pointed out that in our work we regularly face various barriers, which have negative effects on the preparation for a patient’s release from prison, on the prevention of relapses into addiction, and on the risk linked with AIDS and hepatitis. There are human barriers connected with patients themselves:
— psychological factors and personality are linked with hepatitis and HIV, with the refusal of medical follow-ups, consultations and exams, and with quitting treatment;
— psychological factors and personality are linked with substitution treatment: people insist that “It’s a drug!”;
— psycho-cultural factors: a considerable number of foreign patients (Algerians and other Africans) share a negative attitude to treatment because of what they see as cultural interpretations of their illness and religious beliefs. This attitude is often found with recent migratory patients.

**Substitution treatment in our Centre in prison**

All newcomers are seen at our Centre during psychiatric consultation and by psychologists. A contact is made with the centre or with the GP to whom the patients will be referred after substitution treatment. The prescription is essentially Buprénorphine HD (registered in France under the brand name of Subutex by Schering-Plough Laboratory).

It is essential to take care of the prison context during and after detention: treatments may have to be suspended during police custody; time spent in prison, or during the transfer of detainees to other jails may involve high risks of treatment suspension; problems may arise from the sale of drugs, and others from to the sale of prescriptions for tablets; this is linked with the pain and “distress” caused by the time spent in prison;
there may be pressure and threats from other detainees, who aim to use the substitution treatments of our patients to get high. After detention, there is the situation of foreign patients waiting for expulsion from France, whose substitution treatment is suspended when they leave prison to go to the centre where decisions are taken on expulsions; there should be a guarantee that the out-patient centre will continue the treatment.

Our team thinks that substitution is an important instrument of care, but it should not be considered the only treatment for drug addiction. During detention, individual requests for substitution treatment will not always be accepted: work should be carried out with the patient on his or her motivation, previous forms of care and drop-out periods. The efficacy of this treatment depends on whether the care given to addicts is global before, during and after the period of detention. In a prison setting it involves close collaboration with the various teams, and during the follow-up, with the health actors (GPs, druggists, hospital staff and treatment centre for addicts), and with the social network.

**Sociological characteristics of our patients in 1999**

We now report the results of follow-up by psychologists on 242 patients.

Here are our findings:

— an average age of 31 years;

— a high percentage of foreigners: Algerians (20%) are the largest group (most of them born in Africa: 15% of the whole group of 242). The Maghrebians comprise those born in France and those born in Algeria (most of the latter immigrated at an early age), and the groups that have chosen or not chosen the French nationality. There is also another division, between those who came to France legally, but outstayed their legal visa period, so reaching an illegal situation, and those who entered France illegally and were irregular from the start. The behaviour of the first two groups precludes any regularization procedure, and means that they should be expelled from France, even if they have been living in France for over 25 years;

— most of our patients are single, but we note that a significant number of them have children (39%) or a family (54%);

— their socio-economic level is very low: they have no qualifications and most are unemployed (63%);

— apart from cannabis, the drug used most is heroin (61%), but most of our patients had been using a variety of drugs, together with alcohol and benzodiazepines (89%). No drugs were found in the case of 4% of our patients: these were patients who began receiving a substitution treatment before going to prison;

— the use of injections is less common than it used to be (prior to treatment: 41%, never: 36%) and we have observed a typical way of consuming drugs. To an increasing degree they are smoked or inhaled, but there is a
link between foreign nationality, mode of consumption and migratory status;
— there is also a link with HIV and hepatitis C: 20% are HIV-positive, but for 49% the serology is unknown; 20% are hepatitis C-positive, but for 55% the serology is unknown;
— many of our patients are detained for offences linked with drugs and, as regards foreigners, illegal stay in France. We note a high incidence of offences not linked with drugs or illegal stay (30%); prison sentences range between 1 and 2 years (45%), because many are habitual offenders (80%); with foreigners, a double sentence (jail and exclusion from France) is often handed out (76%);
— preparation for the patient’s release is based on partnership with the various teams working in the prison setting (medical, psychiatric and social) and on close links with the external network involving health, substitution treatment, rehabilitation and justice;
— health network for ex-patients (with or without housing, substitution treatment, and so on): 64%;
— specialized associations (for HIV patients): 12%;
— ethno-psychiatric consultations for foreign patients: 8%;
— social network (lodging, work...): 45%;
— juridical assistance: 19%.
Intensive sport and risk of heroin addiction

Jean-Jacques Deglon

Summary

Results from Loewenstein's study on heroin addicts in his methadone programme have led us to verify a correlation between intensive sports and addiction. In our four methadone programmes based on a medical-psychosocial treatment model, 378 patients answered a 200-item questionnaire distributed last year. 25% said they had played a sport on an intensive basis, several hours a day for several months. 32% said they had practised a highly competitive sport. It therefore seems that most of our patients have been intensive sports-players — certainly more so than the majority of the population in a similar age range. Significant statistical correlations to be noted among the athletic group are: higher frequency of parents with psychological problems, higher methadone dosage, a greater use of cigarettes before beginning methadone, a higher score on the Beck Depressive Scale, a lower score on a quality of life test and a need for more psychotropic drug prescriptions. These results allow us to formulate the hypothesis that intensive sports for certain young people can be a means to escape from an underlying depression. The stimulation of endorphins and the ensuing activation of dopamine tracts incite temporary psychological improvement. It would thus appear that the association of narcotics, especially heroin, which gives a pleasure that is incomparably stronger than that obtained through intensive sports, with neurobiological/psychological fragility, can lead to a high risk of addiction in this population.

Key words: Intensive Sport - Risk of heroin addiction

The relationship between intensive sports and addiction is not new. Doping and its sometimes dramatic consequences have been under discussion for many years.

A recent investigation carried out in Switzerland among 5500 schoolboys and schoolgirls reported that 38% of those interviewed admitted that they had taken stimulants...
Heroin Addiction and Related Clinical Problems

(caffeine 12%, creatinine 12%, alcohol 7%, sedatives 3%, stimulants and amphetamines 3%, anabolic steroids 1%) to improve their performance. How many of them are in danger of becoming drug addicts and what are the reasons for that danger?

In Paris, at the Monte Cristo Center, William Loewenstein studied this correlation among patients of his who were receiving methadone treatment. The study showed that 20% of the patients had played an intensive sport several hours a day for at least 3 years before becoming heroin addicts.

The CRNS, National Scientific Research Centre in Paris, published a report about this problem in 1998. Its conclusion was that doping was an important problem, that it is important to study the health of those with a history of having played sports at a high level, and that this problem should be examined in methadone treatment centres where intensive sport, doping and addiction are linked.

To verify these data in our methadone programmes, we used our far-reaching 1998 evaluation results to investigate the sports activities of our patients during the period before they became addicts.

In the spring of 1998, 378 patients on methadone treatment in our 4 medical psychosocial centres answered over 200 questions about their history and treatment parameters. Two questions on sport had been asked.

1) Did you practise any sport in an intensive way (several hours a day for several months)? Yes / No

2) Did you practise a sport competitively at a regional level or above? Yes / No

The results were very surprising, because we had supposed that our patients didn’t do much sport. To prevent addiction among young people, the Swiss government were granting subsidies to favour sport activities. The centres that treat addicts were encouraged to develop sports activities. A basketball coach proposed that we should organize a basketball team. About 15 patients signed up with great enthusiasm. Ten of them turned up at the first training session, 5 at the second and only 2 at the third. We then cut short that experiment, which confirmed our impression that addicts were, after all, not very keen on playing sports.

That is why we were so surprised to notice, on the basis of our 1998 evaluation, that 25% of patients had played a sport on an intensive basis, several hours a day for several months and that 32% of the others said they had practised a highly competitive sport at a regional level or above.

So, a majority of our patients, 57%, had played sports intensively or competed in them at a high level before becoming drug addicts — a percentage above that recorded for the general population.

In fact, in 1997, the Swiss federal statistics office conducted a survey on health in Switzerland. Out of a sample of 15,000 people, a third of the young people between 15 and 35 years old played a sport at least 3 times per week. In conclusion, those playing a sport intensively are over-represented in the drug addict population.

In Switzerland, these results created a scandal. A reporter on an important newspa-
per had imprudently written: “Most drug addicts are ex-sportsmen”. That information was repeated in many newspapers and on television. It could have been interpreted as meaning that playing sports intensively could lead to addiction. In Bern, those in charge of the drug and addiction department were the first to react, challenging the idea that good sportsmen tend to become bad drug addicts, while it was also argued that sports are effective in preventing addiction.

To understand these data, the statistics must be interpreted with great caution.

The main criticism made against our preliminary study was that we didn’t have a control group. The best plan might be convenient to monitor a group of people who had played sports at a high level, to discover how many became drug addicts or alcoholics. Only this ratio could verify the degree of correlation between sport and addiction. It is probably very low.

The same danger of undue simplification was run some years ago about the risk of becoming heroin addict when smoking hashish. After noting that almost 100% of the heroin addicts studied by us had smoked hashish before taking opioids, we concluded that hashish smoking led to addiction. In a follow-up study on previous hashish consumers, we noticed that only 5% of them went on to become opioid addicts, approximately the same percentage as for alcoholics compared with the normal drinkers.

What can be said is on the basis of personality and of psychological, emotional, family or social problems, is that if some people find a product that attenuates their difficulties, they will tend to take too much of it, and then go on to try other ones.

Furthermore, psychiatrists are well aware that hyperactivity is often an unconscious defense mechanism against underlying depression. A housewife who feels early depressive symptoms will start to clean the house until she is exhausted.

We think the same is true for those of our patients who have a history of playing sports intensively; they looked to physical activity to achieve an equilibrium.

Our hypothesis is that there is a minority sub-group among those playing sports at a high level who have an underlying psychiatric problem, a source of psychological suffering, often characterized by a major anxiety and more or less evident depressive disorders. By pure chance, they discovered that sport, particularly on an intensive basis, made them feel better. The stimulation of their endorphin system through playing sports at a high level lead to an improvement of this psychological problem.

All that we now know about the role of opioids and methadone in affecting mood and self-esteem authorizes us to defend the hypothesis of the stabilizing and calming impact of the endorphins, whose levels rise during sporting activities.

The opioids exert a powerful action against stress, depression and psychosis. Over a long time-span — since the inauguration of psychiatric history — laudanum drops, and tincture of opium have been recognized as treatments for melancholy. Since then, many studies, particularly those led by the team of Mary Jeanne Kreek at the Rockefeller Institute of New York, have proved that the impact of opioids alleviates many psychiatric troubles. By acting on endorphin pathways, among other things, and indirectly increasing the release of dopamine, opioids allow many subjects, who had always
be aware, to some degree, of suffering from several psychological problems, to feel
better, as if, after many years of only being able to see in black and white, they were
suddenly able to see colours. We understand their desire to retain their colour-vision
from then on, and the risk of addiction.

This makes it clear why many adolescents suffering from a psychological problem
run a higher risk of addiction. For example, we find an over-representation of previ-
ously hyperactive children in our methadone programmes. Hyperactivity with attention
and concentration deficits appears to be like a genetic disease leading to a dysfunction
of the dopaminergic systems. If they are not diagnosed or treated, these persons, once
they find out that heroin is effective in calming them down, have a tendency to take
too much of it.

To heighten the credibility of our hypothesis of a latent psychological problem among
those who had played sports and are now on a methadone treatment programme, we
examined all the statistically valid correlations between hundreds of data appearing in
the results of the 1998 evaluation.

First, we calculated a sports factor, attributing zero points to patients who had played
no sports, 1 point to those who had had an intensive sports activity and 2 points to
those who had taken part in competitions at a regional level or higher. When we cor-
relate patients’ mean sports rate with the importance of their psychological problems,
we notice a great incidence of psychological conditions, mostly depressive, among the
parents of sports-playing patients.

By taking into account the genetic nature of the various types of depression, further
studies might be able to explain the higher rate of mood disorders among children who,
at a given time, found a remedy for depression in playing sports at a high level.

We were interested by another correlation. Among the group 2 sports players, men
were over-represented (90%), whereas a quarter of those in group zero were women
— the usual rate for the drug addict population.

Why should there have been such a large difference? We should correlate these
group 2 sports players with the hyperactivity syndrome to verify the overlap between
these two populations. As a matter of fact, it is known by now that the genetic feature
of this last condition is mostly transmitted by the father and mostly to boys.

Several others correlations reinforce our hypothesis that those who had previously
played sports are particularly susceptible to psychological problems.

Before receiving treatment, they took more heroin than the zero points group (1.1
gr. compared with 0.9 gr.). They also received more methadone (83 and 86 mg. com-
pared with 74 mg.)

More pertinently, we noticed that those in group 2 smoked more cigarettes per
day before treatment (29 compared with 25 for the zero points group). As nicotine is
known to raise the dopamine levels in the brain, this finding appears to strengthen our
hypothesis. The Beck depression rate shows a correlation between levels of depression
and those of sports activity (8.2 compared with 7.2 for the zero points group).

Quality of life, which gives a good indication of mood, is inversely proportional to
the level of sports activity, with group 2 showing the worst quality of life. Finally, the prescription of anxiolytic and antidepressive medication is proportional to the level of sports activity.

In conclusion, we think that some young people suffering from an inner discomfort, and with anxious and depressive tendencies for various reasons, which could be genetic or the result of psychosocial problems, happened to discover a way to feel better by playing sports, probably due to endorphin stimulation. The tolerance they developed could explain why they came to practise sports more and more intensively. The discovery of doping, for some of them, with its stronger effects, can push them into addiction.

We can formulate the hypothesis that, at a given point in time, the impact of increasing releases of endorphins and dopamine actually become less effective because of the growing tolerance, and that even several hours of intensive sport is not enough to attain the psychological improvement they are looking for.

If these sportsmen happen to experiment with drugs, especially heroin, they run a great risk of developing an addiction, as the stabilizing effect for them of even a very small quantity of opioids is much more effective than just playing a sport. Better information about these risks among young sportspeople might be useful as a preventive measure.

After reading our study, several colleagues asked us why, after becoming addicts, our patients didn’t want to play sports any more — a fact that confirms our observations. The most plausible hypothesis is that the strong tolerance developed through the chronic use of heroin and, later, methadone, forestalls all the effects of endorphin stimulation, assuming that they still exist. Even intensive hours of sporting activity don’t give them this calming effect, so they give up sport.

It is worth noting too that, after methadone withdrawal, several of our patients played sport again at a high level, which is a good sign of an at least partial recovery of endorphin stimulation.

Finally, I invite all my colleagues, directors of treatment centres, to verify these data in their programmes, in order to confirm or to contradict our hypothesis. On the basis of these preliminary results, we will set out to verify our data through more sharply focused interviews, and undertake a more scientific evaluation comprising a control group.

References


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The differences between heroin addicts with and without comorbidity

Mercedes Lovrecic¹, Mojca Z. Dernovcek², Rok Tavcar², Icro Maremmani³

Summary

The aim of this study was to discover what clinical and sociodemographic differences separate heroin addicts without (AWC) and those with comorbidity (substance abuse and mental illness-SAMI) among those seeking help in an outpatient methadone clinic. The RSDA instrument and ICD-10 were used. Forty-seven patients (32 males, 15 females) were included (23 SAMI and 24 AWC). SAMI patients had comorbid depression and anxiety disorders. They had more symptoms (anxiety, affective symptoms, sleeping problems, inappetence), and they more frequently abused unprescribed hypnotics and amphetamines before their inclusion in a treatment programme than did AWC patients. Mean dose of methadone in SAMI patients was 63.4 mg and in AWC 43.7 mg daily (p=0.10).

Key words: Heroin Addiction - Psychiatric Comorbidity

Introduction

A recent study [7] found that one fifth of patients in treatment programmes for drug dependence received additional psychiatric treatment. In methadone maintenance programmes for opioid addicts the most prevalent comorbid psychiatric diagnoses are: depressive episode, anxiety disorders and personality disorders [10; 8]. Psychiatric comorbidity is often correlated with unfavourable outcome and higher dropout from treatment programmes [1; 11]. There is strong evidence that adjusted methadone dose in bipolar patients and other psychopharmacotherapy increased the rate of retention in treatment [4] and improved compliance [6]. In bipolar patients methadone probably acted as a mood stabilizer [9]. Increased knowledge about the prevalence and appropriate management of comorbid patients is therefore very important to clinicians dealing
with patients who have substance use disorders.

The aim of this study was to discover what clinical and sociodemographic differences separate heroin addicts without (AWC) and those with comorbidity (substance abuse and mental illness-SAMI) who seek help in an outpatient service for drug dependence.

Methods

Over a three-month period a group of SAMI patients who entered or re-entered the treatment programme at the Centre for the Prevention and Treatment of Illegal Drug Dependence in Koper, Slovenia was included. A random control group of AWC patients was selected.

Sociodemographic and clinical data were collected. Characteristics of opioid dependence were investigated with the Rating Scale for Drug Addiction (RSDA) [5]. RSDA is a complex instrument that covers the following areas: physical condition, mental state, socio-environmental conditions, substance abuse and the clinical status of substance abuse. For the purpose of this study RSDA was translated into Slovenian.

Diagnoses were made according to ICD-10 criteria [13]. The t-tests and chi-square tests were used for comparisons between groups.

Results

Forty-seven patients (32 males, 15 females) were included (23 SAMI and 24 AWC). The most frequent comorbidity among SAMI patients was depression (n=17), while 5 patients had anxiety disorders and one patient had undifferentiated psychosis.

The characteristics of the whole group are shown in Table 1. There were no statistically significant differences between SAMI and AWC in sociodemographic characteristics or length of dependence.

Due to the smallness of the sample, the social consequences of addiction could not be comprehensively analyzed. Legal problems affected 43.5% of SAMI and 62.5% of AWC patients. The difference was not significant (chi-square=1.70, p=0.191).

| Table 1. Characteristics of the whole group of patients (n=47) |
|---------------------|-----|-----|
|                     | M   | s   |
| Age (years)         | 25.2| 5.7 |
| Age at first contact with an illegal drug (years) | 18.5| 4.1 |
| Age at continuous abuse (years) | 20.0| 4.9 |
| Lenght of drug dependence (months) | 50.8| 40.9|
| Age at first therapeutic contact (years) | 21.5| 5.1 |
Somatic problems and psychic symptoms are shown in Table 2. In most patients (n=34) the only drug producing dependence was heroin, while 13 patients depended on several drugs. The mean daily dose of methadone was higher in SAMI patients (63.4 mg±43.2) than in AWC ones (43.7±36.1 mg daily, t=-1.64, p=0.109). SAMI patients

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<th>Table 2. Somatic, psychic symptoms and insight in SAMI and AWC patients</th>
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<tr>
<td>Somatic problems</td>
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<td>Impaired memory</td>
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abused a greater number of (unprescribed) sedatives, hypnotics and amphetamines than did AWC patients (Table 3).

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<th>Table 3. Prevalence (%) of hypnotic (not prescribed), sedative (not prescribed) and amphetamine abuse in SAMI and AWC patients</th>
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Prior to inclusion in a programme all SAMI patients used heroin more than once daily; 39.1% of these patients used drugs as automedication. SAMI patients were more frequently treated with additional psychopharmacotherapy and psychotherapy (Table 4).
Heroin Addiction and Related Clinical Problems

Discussion

This is the first study in Slovenia to have explored the clinical and sociodemographic differences between heroin addicts with and without comorbid mental disorders. The most prevalent comorbidities were depression and anxiety disorders, while only one patient was psychotic. We were unable to demonstrate any differences between SAMI and AWC patients in length of dependence or sociodemographic characteristics. This was probably due to the small sample, which limited the effectiveness of the tests. There was a tendency towards finding a higher frequency of legal problems in AWC patients. This finding is difficult to explain, since serious mental illness (psychosis) usually increases the probability of legal problems as a result of disturbing, disorganized or violent behaviour [3]. Psychic symptoms were much more prevalent in SAMI patients. In addition, SAMI patients more frequently abused sedatives, hypnotics and amphetamines. Both findings are in accordance with Marsden [7], who found more frequent psychiatric symptoms in polyabusers. All SAMI patients used heroin more than once daily and this was assessed by almost 40% of them as automedication for a coexisting mental disorder. On average, methadone doses were relatively low (40 to 60 mg daily), compared with those recorded in the literature [12], with a slight trend towards higher doses in SAMI patients. All SAMI patients received psychiatric treatment, and most of them received prescriptions for methadone maintenance treatment, a psychopharmacological agent and psychotherapy as well. Only two of them were detoxificated. By contrast, one half of the AWC patients were detoxificated with an agonist, while the other half received methadone maintenance treatment. Detoxification was carried out only at the specific request of the patient.

This cross-sectional evaluation revealed a difference in the therapeutic approaches to SAMI patients as opposed to AWC ones; this outcome is fully compliant with the recommendations generally made in the current literature [2].

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<th>SAMI n=23</th>
<th>AWC n=24</th>
<th>chi-square</th>
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<tr>
<td>Psychopharmacotherapy</td>
<td>16</td>
<td>2</td>
<td>18.63</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Psychotherapy</td>
<td>16</td>
<td>1</td>
<td>21.75</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Short term agonist detoxification</td>
<td>2</td>
<td>8.7</td>
<td>12</td>
<td>50.0</td>
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<tr>
<td>Methadone maintenance</td>
<td>20</td>
<td>12</td>
<td>7.38</td>
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Conclusions

The most frequent psychiatric comorbidities were mood disorders and anxiety disorders. Due to multiple problems, SAMI patients need an intensive treatment approach directed towards the management of their special needs. In our sample, SAMI patients more frequently received psychopharmacotherapy and were simultaneously engaged in psychotherapy. A small subgroup of SAMI patients requested detoxification, but continued methadone maintenance treatment in our service. SAMI patients received prescriptions for slightly higher doses of methadone.

There is a trend towards more precise, evidence-based working practice for the special needs of these subgroups of patients attending our centre.

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Methadone Treatment: Italy vs. USA

Methadone Treatment in Europe

Laura Tidone, Marco Riglietta, Maurizio Campana

Methadone Treatment: Italy vs. USA

Methadone treatment has become more and more widespread as a therapeutic approach both in Europe and the USA, so much so that, between 1991 [4] and 1998 [2], the rate of methadone maintenance treatment in the population has increased to levels of 7.6 and 6.6 every 10,000 inhabitants, respectively. These data refer to methadone maintenance treatments only; short-term detoxification treatments were not included in the Italian sample, whereas their inclusion or exclusion is not specified for the American sample. Surprisingly, while the number of methadone treatment-providing centres showed a rising trend in the USA during the same period, a fall in numbers has been documented for Italy. At present, there is one centre for every 345,814 inhabitants in the USA, and one for every 111,028 inhabitants in Italy. It follows that in Italy fewer treatment centres have tended to perform a greater number of individual methadone maintenance programmes. If short-term detoxification treatments performed in Italy were included in the figures, the difference would be even greater (9.9 for every 10,000 inhabitants in Italy). It can be supposed that uncertainty about the composition of the USA sample will not significantly affect the validity of our results. It may be suggested that the greater frequency of methadone maintenance in Italy may be due to different health care policies. Methadone treatment is, in fact, available throughout Italy, whereas 7 out of 50 USA states do not provide any; in Italy, unlike the USA, no national or regional laws define a maximum dosage level, and methadone treatment is free of charge.

Methadone treatment in Europe

Background. Methadone treatment’s impact on street drug use and risky addictive behaviours such as needle-sharing, has been known for years. Whether an improvement in the drug-related quality of life (QoL) actually does spring from the reversal of
addictive behaviours, or can be better accounted for by the influence of sociocultural factors, whether referable to the patient or to his or her environment, is still a matter of debate.

Following the removal of national frontiers as part of the implementation of the Maastricht Treaty, the frequency of movement of opiate addicts within the European Union (EU) has risen. Lack of uniformity in MST policies and cultural backgrounds within the EU may seriously hamper cross-national health care provision and pose questions about its validity. The EU is willing to promote trans-European co-operation through the dismantling of various territorial and ethnic barriers in setting up culture-independent guidelines. Though the uniformity of therapeutic standards may be a limitation in caring for patients from different cultural backgrounds, it is certainly worth comparing the policies used in patient care and management, while exchanging information on, and experiences of, service provision in different cultural areas.

**Material and Method.** In order to clarify the relationship between recovery from addiction and the restoration of social skills, the ECCAS network operators evaluated the outcome of 673 uncomplicated heroin addicts undergoing methadone maintenance treatment in 11 different centres across 8 EU countries (Italy, UK, Ireland, France, Spain, Portugal, Germany, Denmark) plus Switzerland, over a two-year period (1995-1997) [5]. Subjects were grouped into 4 categories (IT1 to IT4) according to the time spent on treatment, starting with the first observation, while newly admitted addicts about to undergo the same kind of treatment were monitored as controls.

Illicit drug use during the previous month was extracted from the patient’s substance use profile derived from EUROSUD [1], along with recent injection and sharing behaviour in the previous month and six months; the drug-related quality of life was assessed along a 16-item scale developed out of the EuroSAAQ [1].

**Results:** patients who had been on methadone maintenance for over six months were less likely to be involved in polyabuse (p <.000001), were directionally twice less likely to have injected in the previous month, and were three times less likely to have been sharing injecting kits within the previous six-month period (p <.000001). An improved drug-related quality of life was also evident (p <.000001). When duration of treatment was accounted for, all the differences noted applied to any of the duration groups except for injection behaviour, which was unchanged for addicts who had been on treatment for less than six months. Findings from the present study are consistent with those from the previous literature [3] as regards effectiveness of methadone maintenance on opiate addiction. Addicts were in their early-phase of treatment (0-6 months). This may suggest a time threshold of six months for the treatment to affect needle sharing.

Beyond that, the positive influence of methadone maintenance on drug-related QoL has been documented, this is an original finding. Furthermore, the choice of a transnational sample has made it possible to assess the validity of methadone treatment as a culture-independent approach which can be adopted in a variety of social settings.

**Conclusions:** improvements in the drug-related quality of life and the reversal of addictive behaviours resulting from methadone maintenance do not show variations
dependent on cultural and environmental differences between nations. It is reasonable to pursue a transcultural uniformity in the standards for drug-addiction treatment, though adjustments may be required on practical grounds to meet the needs and expectations of different cultural settings.

References


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