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Factors influencing the course of opiate addiction

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Abstract

Aims: *To describe important non-biological factors which influence the course of opiate addiction.*

Method: *Studies were reviewed that present empirical results on the long-term course of opiate addiction, progress of opiate addicts during and after treatment, variables that predict remission and abstinence, comparisons of treated and untreated samples, and recovery from opiate addiction without formal help.*

Results: *Opiate addiction is a chronic disorder with high mortality risk. The course of opiate addiction often consists of recurring sequences of addictive opiate use and abstinence. Treatment for opiate addiction, especially maintenance treatment, reduces opiate use; however, it is unclear how long after treatment the effects last. In treated samples, long-term opiate use can be moderately predicted from psychosocial factors, such as peer-group relationships, family problems, employment, and social support. Little is known about addicts who do not participate in treatment or who recover without treatment. Common factors that both treated and untreated addicts view as most important to their success are the social environment and their social life and daily activities.*

Conclusions: *In view of the chronic course of opiate addiction and the phenomenon of spontaneous recovery without treatment, the role of drug-abuse treatment as an influencing factor would seem to require further clarification. Current treatment programmes may leave unaddressed important factors that contribute to the recovery of drug addicts.* Copyright *© 2008 John Wiley & Sons, Ltd.*

Key words: opiate addiction, lifetime course, influencing factors

Introduction

Discussing the factors that influence the course of opiate addiction requires a number of clarifications and restrictions. In this review, we address opiate addiction that is already established, rather than concerning ourselves with development of the disorder. With respect to the course of addiction, we focus on the frequency of individuals' illicit opiate use across time, rather than on outcome variables, such as those related to mental health or criminal activity. We also focus on the psychosocial factors that affect either increases or reductions in opiate use. We nevertheless acknowledge that biological (e.g. genetic) factors play an important role in both the development and maintenance of an opiate addiction.

Our aim in the review is to elucidate the factors that affect the course of opiate addiction and to identify factors that place individuals at risk for continued drug use. Knowledge about such factors might be important to better understand and improve treatment processes. To this end, we review evidence related to opiate addicts' history, the effects of drug-abuse treatment, and the psychosocial factors associated with remission and abstinence.

Methods

A literature search was conducted using the pubmed database of the US National Library of Medicine and National Institutes of Health; only empirical studies were included. The search was conducted in five parts

in which the key terms opiate, heroin, patients, dependent, and addict were combined with additional terms in the respective searches. First, studies about the course of opiate addiction were searched using the key terms life-time or long-term, and follow-up, history, or course. Studies were selected if they included long-term follow-ups of more than five years. Second, information about the progress of opiate addicts during and after treatment were gathered by searching for large multicentre studies from the US and Australia in combination with the terms efficacy, outcome or effect. Third, predictors of remission and abstinence were identified from two comprehensive reviews of the literature. Fourth, studies comparing treated and untreated samples were searched by using the terms treated, untreated, treatment-seeking, and treatment entry. Fifth, studies about recovery without treatment were searched by using the terms untreated recovery, natural recovery, spontaneous remission, or natural history.

Results

Long-term outcome

Regarding the course of opiate addiction, a number of researchers have investigated the status of opiate addicts years or even decades after their first admission to treatment. In cross-sectional observations, the status of participants was placed into one of these categories: more-or-less consistently abstinent from illegal opiates, active opiate user, incarcerated, or deceased. The results consistently show both high rates of active users even decades after initial contact with the treatment system and high rates of mortality (see Figure 1). Fewer than one-third of the initial samples were classified as still-alive and abstinent after decades of observation.

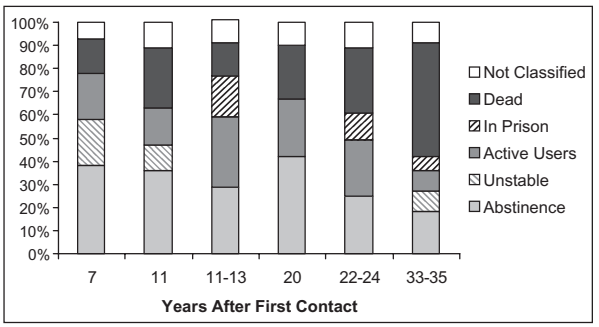

Figure 1. Classification of opiate addicts as a function of years after first contact with the treatment system. The bars from left to right represented data from Haastrup and Jepsen (1984, 1988), Hser et al. (1993), Vaillant (1973), and Hser et al. (2001).

In addition, as Vaillant (1973) and Haastrup and Jepsen (1988) observed, there is no particular age at which the probability of becoming abstinent either increases or decreases. Thus, neither age nor chronicity predict recovery from an opiate addiction.

In addition, one might question how stable across time cross-sectional classification of respondents as active user or as abstinent would be. There is some indication that being abstinent at one time point predicts abstinence at later time points. For example, Haastrup and Jepsen (1984, 1988) found that 75% of the respondents who were abstinent after seven years were also abstinent after 11 years. They also observed, however, that the apparent reduction in the proportion of active users across time could be attributed more to deaths among the sample than to an increase in the actual rate of abstinence.

In the studies reviewed, the starting point of observation was entry into treatment; however, most patients seen in treatment had been substance dependent for a number of years. For example, in Krausz et al.'s (1997) study conducted in Germany, the opiate addicts first contacted a treatment service when they were 25 to 26 years old, six to seven years after they had started using opiates. In the DATOS study, Hser et al. (1997) reported similar results. According to studies on recovery without treatment, recovery occurs within a median six years after active use began. It might, therefore, be assumed that opiate addicts in contact with a treatment system are a selected group who are defined by their inability to discontinue their opiate use on their own. For this selected group, the course of addiction often consists of a sequence of recurring episodes of use, treatment, remission, and relapse.

The effects of treatment

Large multi-centre studies conducted in the US and Australia – DARP (Simpson and Savage 1980), TOPS (Hubbard et al., 1989), DATOS (Hser et al., 1998a), ATOS (Teesson et al., 2006) – show that opiate addicts in drug-abuse treatment, namely, in methadone maintenance treatment (MMT) or residential long-term treatment, reduce their illicit opiate use during treatment and also after treatment, at least during the respective observation periods of the studies; however, rates of recovery, defined as abstinence from opiates, are low (less than 20%). Length of treatment and

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treatment adherence are positively related to outcome (Hser et al., 1997; Teesson et al., 2006); however, the associations can be interpreted in different ways, for example, less severely disturbed patients might adhere better to treatment regulations and stay in treatment longer than more disturbed ones. According to our own research, the effect of MMT on mortality is limited (Scherbaum et al., 2002); however, the risk of death following premature termination of MMT is high.

Psychosocial factors predicting remission and abstinence

McLellan (1983) reviewed a large number of studies in order to identify demographic and psychosocial factors related to retention and progress in treatment. He found that treatment retention and treatment progress were positively associated with age and with former and current employment; the treatment variables were negatively associated with previous and current criminal activity and with polysubstance use. Only treatment retention was positively related to stability of partnership and negatively related to psychological distress. No reliable associations were found between the treatment variables and length of education or severity of the addiction (length or current intensity of the illicit opiate use).

According to Brewer et al.'s (1998) meta-analysis, there have in general been only weak relationships between various demographic and psychosocial variables and continued drug use during and after treatment. Moderate positive associations have been found between long-term opiate use and intensity of pretreatment opiate use, prior treatments for opiate addiction, depression, psychological stress, having a drug-using peer group, work problems, and unemployment. However, the long-term use of opiates was negatively correlated with previous periods of abstinence and with alcohol use. There were suggestions that long-term opiate use was positively related to physical-health problems and family problems, and negatively related to self-efficacy and social support. No associations were established between long-term use and age, gender, length of education, intensity of opiate addiction, age of initiation of opiate use, length of opiate use, current employment, current illegal activities, non-opiate substance use, or psychiatric impairment.

The pattern of interactions between these factors and the course of the addiction appears to be quite complex, and the status of many variables is far from clear. In some cases, there are suggestions that underlying mechanisms are responsible for the observed relationships. In other cases, a given factor might lead to changes in drug use; in still other cases, certain factors might change as a result of changes in the drug use. For example, while in cross-sectional studies current employment is correlated with less drug use, increasing the rate of employment through rehabilitation programmes or employment programmes does not consistently lead to a subsequent reduction in opiate use (Platt, 1995). Thus it cannot be assumed in general that employment decreases drug use. Instead, the direction of causality might be reverse, or both features might simultaneously be influenced by other factors.

The interpretation of the associated factors is difficult without having a theoretical model to guide the interpretation. For example, criminal behaviour is moderately associated with current illicit opiate use, but not with long-term use. Thus, criminality might either co-vary with or be a result of current opiate use, even though it does not contribute to the current use.

It is also noteworthy that some of the factors – which could be interpreted as indicating general instability (e.g. criminal behaviour, which might reflect a pattern of antisocial behaviour or an antisocial personality disorder; psychiatric impairment) or chronicity of the addictive disorder (e.g. age of onset and duration of the opiate use, polydrug use) – seem to have less predictive value than psychosocial factors, such as peer-group relationships, family problems, employment status, and social support.

Comparisons between treated and untreated opiate addicts

Comparisons between treatment-seeking opiate addicts and those not seeking treatment has revealed similarities with respect to age, use patterns, length of heroin use, legal problems, and lifetime psychiatric symptoms (Rounsaville and Kleber, 1985). Rounsaville and Kleber (1985) found that addicts seeking treatment had greater current depression and psychiatric problems than those not seeking treatment. Untreated addicts showed a tendency to function better socially and to have more social support. Comparing untreated opiate addicts with addicted patients receiving various treatment modalities, Eland-Goossensen et al. (1998) found that the untreated opiate addicts were approximately comparable to those on methadone maintenance, but the untreated group had fewer self-reported problems with drug use and were involved in more illegal activities than treated groups. Addicts in detoxification treatment and those living in therapeutic communities

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had more psychological and social problems than methadone treated or untreated subjects. Hser et al. (1998b) studied a group of treatment-seeking opiate addicts and compared those who had entered treatment six months later with those who had not. They found that the two groups were similar in age, gender, length of education, and type and duration of substance use. However, those with previous treatment success were more likely to enter treatment than those without. Ross and colleagues (in the Australian ATOS study; Ross et al., 2005) found that opiate addicts entering treatment were similar to those who were not entering it with respect to length of heroin use, current drug use, and treatment history. From interviews with regular heroin users, Klär (1997) identified three types of opiate addicts who differed with respect to: legal problems, use of the helping system, social disintegration, and health problems. One type was described as having a 'career of distress'; they were relatively high on all four of the dimensions. A second type was called 'repression immune'; they used the helping system more than the other types and were moderate-to-low on the other dimensions. A third type, called 'medicalization immune', made little use of the helping system, were moderate-to-low on social disintegration, had moderate health problems, and had serious legal problems.

To conclude, opiate addicts who are receiving or not receiving treatment do not differ remarkably with respect to the socio-demographic variables and their history of drug abuse.

Addicts who currently are not seeking or receiving treatment probably have fewer self-reported psychological, social, and drug-use problems than those in treatment. These differences might reflect either (a) untreated participants' lack of self-awareness or (b) more immediate reasons for seeking treatment among those in treatment.

Recovery without treatment

Robins and colleagues (Robins et al., 1974; Robins and Slobodyan, 2003) found that only 12% of the heroin-dependent Vietnam soldiers who returned to the US were still drug-dependent three years later. Although more than half of the returning soldiers tried narcotics again, only a minority of them became re-addicted. Even among those who continued regular heroin use after returning, only half of them became re-addicted. Only 14% of opiate-addicted veterans had been treated, and relapse rates among those who were treated were nearly as high as among the civilian population (about two-thirds).

Recovery without treatment is confined neither to returning veterans nor to short-term users. Waldorf and Biernacki (1981) found former addicts who had been abstinent for two years or longer – even though they had been active users for a median length of 5.7 years – had never been in treatment. The data from the epidemiologic catchment area presented in this study show that people with all kinds of drug addictions remit quickly, even without the help of treatment. These data suggest that addicted individuals who enter treatment are those who cannot stop on their own and who often cannot do so even when treated. However, there have been only a few methodologically sound studies on natural recovery from opiate addiction (see Sobell, 2000).

Waldorf (1983) interviewed former addicts who had recovered either with or without treatment. The most important initial reasons that both groups of addicts named for stopping their opiate use were humiliating experiences (e.g. being imprisoned), pressure from significant others, drug-related death of a significant other, and health problems. The most important factor affecting their giving up opiate use and maintenance of abstinence was to establish new, important personal relationships. In addition, the two groups named the same most important sources of support: new and old friends, family, and spouse. Even the treated group rarely (<20% of the time) described support from social agencies as important. The similarities between treated and untreated groups could mean that there is no fundamental difference between processes of recovery that occur with treatments and those that occur without treatment.

Through interviews conducted with stable, abstinent opiate addicts, Klingemann and Efionayi-Mäder (1994) found that the following factors were important in helping addicts to maintain their abstinence: social and family relationships, employment, vocational training, and leisure activities (e.g. hobbies that were engaging). The authors concluded that it is essential for successful recovery from an opiate addiction to have a conventional lifestyle which is experienced as meaningful and which brings structure to one's daily life especially during difficult times.

Discussion

The empirical evidence suggests that opiate addiction is a chronic disorder that is marked by frequent relapses. The extended observations of opiate-addicted persons

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in contact with the treatment system indicated that many of them used opiates for decades. Only a minority of the participants recovered, and there was no indication of a particular age at which recovery was likely to occur. Even those who achieve stable abstinence at some point in time are still at a substantial risk for later relapse. In addition, rather than a simple sequence of addictive opiate use, treatment, and subsequent recovery, recurrent sequences of opiate use and abstinence are common.

There is evidence that opiate addicts in treatment reduce their opiate use, at least while they are in treatment. Opiate-addicted persons in treatment appear not to differ fundamentally from those not receiving treatment. There are some indications that, on average, addicts who enter treatment have more acute psychological, social, and drug-use problems than untreated addicts. It should be noted, however, that addicts do not always enter treatment when their symptoms are severest. They might enter treatment for legal reasons – in many cases, treatment is mandated by the court – or voluntarily to take some time away from being on the street. Among treated samples, psychosocial factors (such as peer-group relationships, family problems, employment, and social support) are moderate predictors of long-term opiate use.

In contrast to opiate addicts who are in contact with the treatment system, little is known about those who recover without treatment. Most self-reported factors that are associated with recovery without treatment concern the social environment and one's social life and daily activities. This conclusion also applies to recovered addicts who have experienced treatment. It should be noted, however, that it is difficult to assess the validity of self-reported, retrospective attributions. Factors such as increased social support and the satisfaction with daily activities might be a consequence of the reduced drug use rather than its cause. In short, both (a) the effect of treatment on the course of chronic opiate addiction and (b) the phenomenon of spontaneous recovery without treatment would seem to require further clarification. Important factors that contribute to recovery, such as the ability to establish a stable relationship with a non-addicted partner, often are not addressed in treatment programmes.

Stall and Biernacki (1986) formulated a three-stage model of spontaneous recovery. First, the addicted person resolves to terminate his or her problematic relationship with addictive substances. Initiating factors might be medical problems, pressure from family and friends to stop using, extraordinary events, financial problems, etc. Second, the person makes a public pronouncement of the decision to quit and starts to implement the decision, e.g. by finding substitute activities, replacing old associates with new ones, developing non-drug leisure interests, and changing the place of residence. All of these things signify a commitment to change that rests on the public pronouncement. Third, in the maintenance stage, the person experiences continuing social support and a growing sense of self-confidence and willpower, and discovers meaning in life through religion, education, physical exercise, or identity. According to Walters's (2000) review, this model has been empirically supported in studies with people addicted to alcohol or tobacco. Studies with opiate addicts are, however, rare.

Combining the empirical results that were discussed with the model just described reminds us that addictive opiate use is only one of the behaviours in an individual's repertoire. Drug users value a variety of things other than using drugs, to which alternative goals can be linked and for which new behaviour can be acquired. It is true that the stereotypical 'junkie' who has a long-term deviant lifestyle, little education, and little experience with intimate relationships would likely have greater difficulty than other kinds of addicts in developing an alternative lifestyle. These difficulties might restrict the goal of treatment to harm reduction, i.e. reducing the opiate use and the associated risky behaviour itself would be a legitimate goal of treatment, even without attempting to change the person's lifestyle. However, attempting to change one's lifestyle could be an incentive to comply with a drug-specific treatment. In such a context, treatment would address both the problematic behaviour and the patient's other goals and resources for changing the addictive behaviour. The community reinforcement approach (Roozen et al., 2004) is one approach that is used to change both drug users' lifestyle and their use of drugs and risky behaviour associated with it.

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Declaration of interest statement

The authors have no competing interests.

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