Opiate addicts in and outside of treatment; Different populations?

Opiaat verslaafden binnen en buiten de drugshulpverlening: Verschillende populaties?

Proefschrift

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Voor mijn overleden oma's

Maria Jansen en Adriaantje Monster.

Zij zouden ook graag verder hebben geleerd,
maar zij hadden de tijdgeest tegen zich.

Contents

1. General Introduction

The core of this study is related to the insight that the population of opiate addicts is quite an invisible group. Some parts of this group can be identified at treatment institutions and in prisons. However, a large part of the opiate addicts is hard to detect. This is because their illegal activities are often hidden and because many of them move frequently from one place to another. Although some are easy to spot at public places, these are very hard to approach for research.
For years studies have been performed in the different echelons. Researchers studied criminal behavior of addicts in prison. Others analysed factors that influenced treatment success of addicts in drug treatment settings. Again others described the life of the drug using subculture by participant observation. Each data set was used to answer the specific research questions and that was it. This study is a first step to a more holistic approach. Separated pieces of information do not satisfy anymore. What is needed is comparable information gained in all known subgroups of the population. Only in that way the most complete view on opiate addiction can be reached. The next step is to repeat these measurements in the different subgroups regularly. In that way a consequent monitoring of the population will become possible, of which policy makers, clinicians and researchers will benefit.

In this thesis characteristics of opiate addicts who apply for a methadone programme, a clinical detoxification programme, a drug free therapeutic community and opiate addicts outside of treatment are described. A comparison is made of the nature, severity and extent of drug use and the accompanying medical, legal, employment, social and mental complex of problems. On the basis of this comparison the following questions will be discussed: Which factors are linked with the decision of opiate addicts to seek professional help? and Which factors are linked with the choice for a specific type of treatment? The study design and the results are presented in four sections, which are structured according to the central research questions they provide answers for. Each section contains three chapters. Section two describes the outline of the study and the methods used in detail. Section three presents problems with drug use and accompanying problems. Section four focuses on comorbid psychopathology (dual diagnosis). In section five processes of addiction and help-seeking behaviour are discussed. The final section six contains the conclusions, general discussion and a summary.

2. Study design, methods and materials

The first of the three chapters (2.1) in this section presents the reason and relevance of the study, the aim and central research questions, the study groups and the instruments used. Special attention is paid to the methods used to acquire respondents outside of treatment. The second chapter (2.2) describes in detail how access is gained to this subpopulation of heroin users outside of treatment. Qualitative descriptions illustrate this methodologically important phase of gaining access. Chapter 2.3 describes the elaborated snowball sampling method that was used to select respondents outside of treatment, after access was gained to the subpopulation. Both theory and practice are discussed. The last page of this section (2.4) is a supplement that describes the sampling methods and data collection in the treatment settings and discusses the non-response.

The chapters of this section are based on the following papers:

* M.A. Eland-Goossensen, E.C. Vollemans & V.M. Hendriks (1995). Verslaafden binnen en buiten de drugshulpverlening: Een combinatie van klinisch- en veldonderzoek. (Opiate addicts in and outside of treatment: A combination of clinical and field research). Tijdschrift voor Alcohol, Drugs en andere Psychotrope Stoffen, 21(1), 11-21.

* M.A. Eland-Goossensen, E.C. Vollemans & V.M. Hendriks (1995). Heroïnegebruikers 'zonder zorg'; eerste indrukken uit een onderzoek in Den Haag (Heroin users without treatment), Epidemiologisch Bulletin 30(3), 17-23.

* M.A. Eland-Goossensen, L.A.M. van de Goor, E.C. Vollemans, V.M. Hendriks & H.F.L. Garretsen (1996). Snowball sampling applied among opiate addicts outside of the treatment system. Addiction Research, in press.

CHAPTER 2.1

Addicts in and outside of the treatment system: A combination of clinical and field research

Introduction

So far, the majority of addiction research has been carried out among addicts who are in an addiction-treatment facility. The emphasis is partly on the analysis of existing registration data (LADIS, RODIS, etc.), and partly also on research that is built around specific themes (diagnostics, early drop-outs, prognosis, etc.). Criticism on this patient-based research is often directed at the fact that it involves a selected population with possible specific characteristics and problems, which makes that the results cannot or not sufficiently be generalized to the total population of addicts. After all, a patient population consists by definition of people that experience problems with regard to their drug use and that have sought help to solve these problems.

Little is still known about addicts who have not yet entered the treatment system. Are they addicts who have never been in for treatment or heroin addicts with a long and varied treatment career who do not receive treatment at present? The relatively small number of addiction research outside of treatment facilities has shown little resemblance with clinical research in terms of methodology and study population. Because of their scale and consequently limited questioning, surveys generally only provide an overall picture of addiction or addiction-related problems in (parts of) the population, and important groups of addicts (the so-called hidden populations) are not included. However, because of the qualitative nature of the data, ethnographic research often provides very "rich" descriptions of specific phenomena in the micro-social context, but is considerably less concerned with the generalizability of the data.

For policymakers on addiction issues, an overview of the whole addict population is relevant. It is important for planning new facilities, i.e. adaptations of existing facilities, as well as for aspects of the view that addicts hold on the types of treatment, public relations etc. From a scientific point of view, a comparison of addicts in and outside of treatment could offer new insights into the factors that play a role in the onset of the need for help and actually seeking help, or even the absence of the need for help. Methodologically speaking, an important point of departure is that the strong points of qualitative and quantitative research can be done more justice by combining both in one and the same study.

Research questions

With this background in mind, a study called "Addicts in and outside of treatment: Different populations?" was launched in 1991. The study's objectives are to determine what the differences and similarities are between addicts in and outside of drug treatment environments with respect to the nature, severity and extent of drug use, and the accompanying medical, employment, judicial, social and mental complex of problems. On the basis of this comparison the study tries to answer the following questions: (1) Which factors are linked with the decision of addicts to seek professional help? (2) Which factors

are linked with the choice for a particular type of treatment? These aspects are discussed further below.

Treatment - yes or no?

The first research question investigates if and to what extent there is a need for help among addicts without treatment contacts. Also, the process that actually leads to an addict seeking help is examined, as well as the control mechanisms and survival strategies which prevent someone from seeking help. The answers to this question could provide important clues as to (a) the accessibility of treatment for addicts, and (b) gaps in the structure and number of treatment facilities.

In literature, a distinction with respect to the need for help is made between experienced and expressed need for help (Mackenbach 1982, Raat 1987, Bannenberg 1988). The experienced need for help refers to the need that does not lead to an addict applying for treatment. The expressed need for help refers to an addict actually asking for help, which manifests itself in an application for treatment or counselling. Planning or adapting facilities without including the problems and experienced need for help of addicts outside of treatment may lead to unnecessarily counterproductive results of drug treatment.

Research shows that the use of psycho-active drugs among addicts often coincides with serious problems in other areas (health, employment, legal, social and mental problems). The prevalence of psychiatric disorders among addicts is many times higher than among the general population (Rounsaville et al. 1982, van Limbeek et al. 1986, Hendriks 1990). American research suggests that among (opiate) addicts in treatment there are more social problems, drug-related crimes and depressive disorders than among addicts outside of treatment facilities, even though the duration and severity of the addiction in both groups is comparable (Rounsaville & Kleber 1985). Dutch research into this, however, does not exist. Perhaps there are less drug-related problems among addicts outside of treatment or maybe they are better capable of minimizing the negative consequences of drug use (Zinberg 1984). There may also be very isolated addicts with severe problems for whom the treatment system is inadequately equipped. There are for example indications of a growing number of addicts with severe mental and other inhibiting problems, the so-called complex addicts (NRV 1992), who, because of their addiction problems, cannot be registered with treatment facilities (i.e. RIAGG or APZ facilities - regional institutes for mental health care), whereas their mental problems often result in a contraindication for treatment in special care units.

Not only the (more or less) actual extent of the problems, but also the subjective experience of the problems (Rosenstock 1960, 1974) as well as the influence of e.g. social support (Agar 1977, Biernacki 1986, Hughes 1977, Shaw et al. 1978, Zinberg 1984) seem to play a role in the process of seeking or not seeking help. In order to investigate the importance of these factors, this study also focusses on a description of behavioural, experience and setting variables with respect to drug use and drug-related problems. Particular emphasis lies on the possible differences between addicts in and outside of treatment with respect to (1) the experience of drug use, the extent of control (loss) and to one's functioning in other areas, (2) the role of the social network (a) in the decision to seek help, or (b) in continuing the drug use without professional help, and (3) addicts' perception of and opinions on the treatment system.

Depending on the results, the study could be used to develop a better and more differentiated treatment system for outsiders and to improve the accessibility of the treatment system. The results of this study may also show that there is no need for more or other facilities, but that the perception of the treatment system among addicts should be improved by way of information and outreach activities.

Choosing a type of treatment

The addiction treatment system in the Netherlands has been developed into a broad system of facilities, in which the objectives vary from harm reduction to complete abstinence. This broad availability is meant to achieve the greatest possible accessibility to treatment on the one hand, and to fully tune the need for help and the available facilities on the other hand. Although the importance of a more efficient structure of the addiction treatment system is underlined on all sides, it is still unknown which differences there are between addicts that are reached via the various treatment modes.

It is clear, however, that addicts both in and outside of treatment form a differentiated population in terms of their problems and their need for help (Kosten et al. 1982, McLellan et al. 1981, 1983b, Rounsaville & Kleber 1985). A structural comparison of client populations between treatment modes by means of standardized research instruments could offer more insight into the (differences in) nature, extent and severity of the drug and drug-related problems of people that are reached by the various institutes. Insight into these factors could provide important clues as to the similarities and differences between the respective admission procedure (intake criteria, contraindications) in the various institutes and the characteristics of the admitted population. On the basis of this information the present study may contribute to a better interpretation of intake criteria, intake decisions and the characteristics, objectives and expectations of clients that report themselves for treatment. This applies to interpretations within the categorical treatment system and also between the categorical and general treatment systems. Although research into these factors was done in the Netherlands in the last decade among alcohol addicts (Bannenberg 1988, Raat 1987), this kind of research does not exist for drug addiction. Careful development and a consistent use of intake criteria is urgently required in the addiction treatment system in view of both budgetary plans and quality improvements. In that sense, the present study forms the first step towards a differentiated client therapy allocation (matching). The next step is to test the intake criteria and intake decisions against treatment results in the various institutes.

Design of the study

The research is carried out among 400[1] addicts in the town of The Hague. In the study, four research groups of 100 persons each are distinguished, i.e. persons who report themselves for treatment in a clinical detoxification centre (Addiction Circuit P.C. Bloemendaal "De Weg"; N = 100), a drug-free therapeutic community ("Emiliehoeve", Addiction Circuit P.C.

[1] In order to determine the cogency of univariate tests with respect to the proposed size of the sample, a power analysis was carried out. On the basis of previous research into differences between addicts in a clinical detoxification centre and a drug-free therapeutic community (Hendriks 1990), an effect size of .20 was considered to be meaningful.

Bloemendaal; N = 100), and a methadone programme (Centre for Addiction Treatment Zeestraat; N = 100). The fourth group consist of 100 addicts in The Hague with no treatment contacts.

Of all the respondents it is required that they are (1) opiate dependent according to the DSM-III-R criteria (APA, 1987), and that (2) the addiction should have started at least two years before the study. Of the respondents in the three treatment groups it is also required that they continue treatment for at least two weeks after admission. In that case, one can assume that they actually "use" the treatment facility. A requirement with respect to the respondents outside of treatment is that they do not receive treatment during the course of the study and that they did not receive treatment for drug and drug-related problems for more than two consecutive weeks in the last two years.

Within a week after admission (in treatment) or after an appointment (outside treatment) data are collected by means of the Addiction Severity Index (ASI-R; McLellan et al., 1980; Hendriks et al., 1991) about demographic background, physical health, employment situation, alcohol and drug use, treatment history, legal status, social functioning and mental problems. The respondent has to indicate for each of the above areas to what extent he feels a need for help for the respective problems; the interviewer has to make a rating of the problems' severity.

In order to get an idea of the differences in nature and scale of comorbid mental problems between the four research groups, the respondents also take part in the Composite International Diagnostic Interview (CIDI, Robins et al., 1988), on the basis of which (among other things) a DSM-III-R diagnosis can be formulated.

Finally, an open interview is conducted with a number of respondents (25% in each of the four research groups) in which - parallel to the ASI areas - respondents' experiences and interpretations are discussed with respect to drug use and drug-related problems, the role of control (loss), social support, etc. With respect to addicts who actually apply for help, questions are asked about their motives, the immediate cause and the purpose of admission and choice for treatment (groups in treatment), or about the reasons not to seek professional help (groups outside treatment). Specific emphasis lies on the respondent's perception of and the opinions on the treatment system. In addition to these interviews with respondents, an extensive report is set up by means of field notes in the group with no treatment contacts about the circumstances in which the respondent lives and about the situation in which the interview takes place.

The group of addicts with no treatment contacts

While the study among clients in treatment situations roughly follows the same methodological "routine" as in many previous studies (admission cohorts, assessment shortly after admission, use of standard instruments etc.), it is not always possible to use these common methods with respect to addicts outside of treatment. Apart from the various practical aspects, the main problem is that a random selection of respondents from "the" group of addicts outside of treatment is impossible because (a) the size and composition of the population outside of treatment is largely unknown, and (b) important segments in this population cannot be reached by means of common sample and approach methods (no fixed address, tramping, susceptibility to the subject, distrust of researchers, etc.).

In order to arrive at the most representative picture of addicts outside of treatment, the present study tries to approach respondents by means of the snowball sampling method. In

comparison to other sampling methods, snowball sampling begins with the description and identification of the study group(s). Because of the relatively "hidden" nature of particularly the sub-groups in the population, it means in actual practice, that we start off with the compilation of a tentative "card" of the size, composition and specific characteristics of addict groups in various locations in the study area, all on the basis of information that is available from different sources (outreach fieldwork, needle exchange programmes, previous research, etc.). This tentative card is constantly readjusted, refined and expanded during the course of the research, and it forms a guideline during the course of the snowball sampling process: have the charted networks been satisfactorily reached in the study or have important groups been ignored?

On the basis of the first - tentative - card, key figures are selected in the various networks who may be able to provide access to the relevant network. We ask these informants to nominate other people that meet the inclusion criteria. Subsequently, one of these nominated persons is a-selectively approached and asked to participate in the study. Together, these approached respondents are the zero stage sample. In snowball sampling this procedure is repeated until the chain ends (nobody has been nominated or the nominated persons refuse to participate or cannot be contacted).

In the sampling procedure described above it is very important that the researcher is familiar with specific customs and phenomena in the study group on the one hand, and is trusted by - and finds alliance with - the respondents on the other hand. That is why in the present study an important part of the fieldwork is done by a so-called community fieldworker. The concept of community fieldwork - which stems from cultural anthropology - is based on the idea that studying a (sub-) culture from an insider's point of view could lead to substantially different results than an outsider studying that (sub-) culture. Specific culture-related factors (language, traditions, symbolics, etc.), which can be overlooked or misinterpreted by scientific researchers, are usually better understood by an insider. The community fieldwork in the present study departs from a similar reasoning. The community fieldworker is somebody who, based on personal experience, knows about - and is familiar with - specific phenomena in addict populations. From this background the community fieldworker plays an important role with respect to the cards of social network users, use patterns, locations and times, contacting (key) respondents, gathering data, and the analysis and interpretation of the results.

Some fieldwork experiences

Since the start of the study, 216 persons have been interviewed. In this group, 58 addicts are without treatment contacts. This latter group could be approached by means of intensive fieldwork (repeatedly failing to keep appointments, more or less accidental meetings with respondents, parts of interviews that had to be conducted in two or more sessions, etc.).

The first step in the fieldwork was to contact outreach workers in the needle exchange programme of the GGD (i.e. local Health Service) in The Hague, and also other fieldworkers who were already in touch with (key figures in) the addict population outside of treatment. In addition, locations were visited in the early stages of the study where, it was expected, important sub-groups could be found. During the fieldwork a van was used which served as a mobile field station. Inside the van, a total of 13 interviews were conducted. We also had available a work room of an outreach worker in the centre of The Hague, where eight

interviews were obtained. The majority of the interviews were conducted at people's homes (N=28), in the station buffet (N=4), in a day centre for the homeless (N=9), and in a dealers' place (N=4). It was in fact not that difficult to gain access to addresses of people and dealers' places. Particularly important factors in this were the introduction by a third party (often a client, or sometimes another dealer) and the work of the community fieldworker (trust, "alliance").

In the following description, John plays a central role in the introduction of the researchers to people's homes. John is an older user, whom we already knew from the study and who is known by many other users.

> *'We had asked John to get us in touch with dealers. At the first address we met with a lot of distrust, because clearances had recently taken place in the street. John said that he wanted to buy cocaine, after which we were led to the back of the building. Through a long dark corridor we came out in a dimly lit kitchen where two persons were hanging out. John bought two balls of cocaine, after which he began to talk about the study. This evoked a lot of mistrust, particularly because there were three of us and only one bought something, which is unusual.*
> *Next, we contacted a 'runner' on a nearby square who - in exchange for a portion of the cocaine that John had just bought - took us to a users' place. There John introduced us to the occupant and explained to him the purpose of our visit. After John had shared his cocaine with those present, the last trace of distrust disappeared and they seemed to be interested in the study. This for us was the basis to return here several times.'*

As for the snowball aspect, the contact we had with John resulted in a chain of three consecutive stages. So far, the total length of the snowball chains in the fieldwork consisted nine times of one stage (the "start respondent"), 13 times of two stages (the start respondent plus one nominee), five times of three stages, three times of four stages and three times of five stages. The average length of the chains is 2.33 stages. An added level of difficulty is that there are no public meeting points for users in The Hague, such as in Rotterdam, the project called 'Platform Zero' and 'St. Paul's Church'.

Some early results

At present, the study is still in the data collection stage. Of all data, however, a proportion of the CIDI interviews has been processed and on the basis of the - indeed overall and provisional - results an impression can be obtained as to the differences and analogies in nature and scale of the psychiatric problems between the four research groups.
Notable among the data in the table is that the prevalence of psychiatric disorders with various diagnoses is lowest in the addict group outside of treatment. Big differences in this respect are primarily found for depression, generalized anxiety, and alcohol misuse and abuse. As for the diagnosis "major depression" it is furthermore notable that there is a gradual increase in prevalence from the "field group" (5%), via the methadone group (12%), the detoxification group (25%) to the group of addicts in the therapeutic community (32%). Although in this phase of the study, because of the absence of significance tests, it is not possible to attach any conclusions to these differences, the data do suggest that among addicts outside of treatment there are, generally speaking, less comorbid mental problems

than among addicts in treatment facilities. Conversely, the phobias seem to be proportionally distributed among the field group on the one hand and the three treatment groups together on the other hand. It is also notable that the prevalence of schizophrenia

Table 1 "Lifetime" prevalence of DSM-III-R disorders

	Field n=36	Meth. n=34	Detox n=36	TC n=31
Major depression	5%	12%	25%	32%
Dysthymia	19%	6%	22%	29%
Manic episodes	3%	9%	5%	3%
Generalized anxiety	0%	12%	8%	6%
Simple phobia	41%	26%	19%	39%
Social phobia	31%	21%	31%	45%
Agoraphobia without panic disorder	19%	24%	14%	6%
Agoraphobia with panic disorder	8%	0%	3%	0%
Panic disorder	0%	6%	11%	6%
Alcohol misuse	1%	12%	14%	13%
Alcohol dependence	15%	47%	47%	39%
Schizophrenic disorders	8%	3%	14%	0%
Obsessive compulsive disorder	3%	6%	6%	3%
Bulimia nervosa	0%	0%	3%	0%

outside of treatment is high in comparison to that in the groups in treatment. Possibly, this high prevalence partly reflects cocaine-induced psychopathology (particularly psychosis), which is increasingly found among addicts (see e.g. Hendriks & Abrahamse, 1994), whereby the use of "cooked" cocaine in particular seems to play a role. With regard to this diagnosis, however, it is also true that the presence of acute psychotic problems form a contraindication for treatment in the therapeutic community.

In order to correctly interpret the data in the table, it is important that the findings are regarded as part of the complex of data available from other sources (ASI-R, open interviews and field notes). In order to provide an idea of this process of mutual "cross-pollination" of the various information sources in the study, a case is described below - albeit on N=1 level - in which the data from the instruments complement each other.

Elly's case

We found Elly in an empty building that was nominated for demolition as part of an urban renovation scheme. The building was not heated, there was no running water and the front door could not be locked. Elly had regular contact with a number of older users in the area, who use heroin as well as amphetamines (speed). In this social network they get their money by removing scrap metal from buildings that are to be demolished, and by

"rummaging": searching through garbage bags for valuable things. Elly spent most of her day in bed, waiting for her partner to return with money and then with dope.

The ASI-R data reveal that Elly is 40 years old, has been using heroin since four years, speed since six years and cannabis since eight years. From the age of 28 she also used a lot of alcohol, but stopped using it three years later. Besides the drug use there are serious problems in the ASI life areas of physical health, social life, and mental complaints. Elly indicates that she urgently needs help in these areas as well. The physical complaints consist of an acute slipped disc, bowel disorders and, in the past, cervical cancer. She has lost contact with her children and other relatives and her relationship with her partner shows signs of serious problems. As for her mental state she reports, up to and including the previous month, depression, anxiety, problems containing her aggression and suicidal thoughts. She still experiences many mental problems because of the death of her husband, who was shot dead 10 years ago. In the past, Elly has been in for treatment with RIAGG (i.e. Regional Mental Health Service) for her mental complaints. Her only contact with the addiction treatment system existed of a brief participation in a methadone programme a number of years ago.

With regard to the mental complaints, the CIDI data show that, diagnostically, there is no major depression. However, Elly meets the DSM-III-R criteria of various anxiety disorders: a social phobia (from the age of 32 until the present), a simple phobia (also from the age of 32 until the present), and a panic disorder without agoraphobia (from the age of 34 until 36).

From the open interview it emerges that for Elly, there is a direct link between her physical complaints and amphetamine use in particular: '*All physical complaints disappear when you use that. I just kept using speed. I've got a slipped disc, but you get used to pain at some stage. When I'd used speed for the first time, the pain in my back disappeared. I really felt as light as a feather. That's why I kept running after it, because I didn't want to feel that pain again.*'

As for treatment it is striking that despite Elly's need for help there have hardly been any treatment contacts. From the open interview it emerges that the daily trip to the methadone bus especially - and the problems this creates for structuring her daily routine - was an inhibiting factor. The intake procedure and waiting list too she experienced as thresholds.

In conclusion

While the above example provides a description of the approaches that emerge for one person in the various instruments, the remainder of the study will focus on characteristic paths, life courses, careers and possibly similar (specific) themes within certain sub-groups. In doing so, the analyses are aimed - at least with regard to the qualitative part of the research - at obtaining the smallest possible differences **within** groups and the biggest possible differences **between** groups. The ultimate objective is to arrive at a combination of qualitative and quantitative insights, whereby hopefully the whole will be more than the sum of its parts.

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CHAPTER 2.2

Heroin users without treatment; first impressions from a study in The Hague

A reasonably large amount of information is available about heroin addicts in treatment facilities. What happens outside of this circuit is a lot less obvious. However, in order to get an idea of what is going on in this hidden population, ethnographic fieldwork has been done in the town of The Hague in The Netherlands. A vivid report on snowball sampling and a number of conclusions and recommendations for this type of research are described below.

Since 1992, the Addiction Research Institute has been studying differences and similarities between heroin addicts in and outside of drug treatment facilities in The Hague. Such a comparison can provide more insight into the nature, severity and extent of the drug problems and problems in other, drug-related life areas in both addict groups. It might also be possible to obtain information about the factors that play a role in the onset of addicts' need for help and their search for help, or indeed in the absence of a need for help.

Hardly any research has been done among the group of addicts outside of treatment; and not without reason. In research terms, this group is called a 'hidden population', because they cannot be recovered from registers (for example population registers or treatment records). And even if this were the case, this group would still be difficult to localize, let alone approach and ask to participate (Garretsen et al. 1992).

From cultural anthropology stems a method that can be used for studies of groups that are difficult to reach: 'ethnographic fieldwork'. This means that the researcher mingles with the target group in order to arrive, by means of various approaches, at a better understanding ("verstehen") of the behavioural characteristics and social processes under investigation. By means of snowball sampling it is possible to get in touch with people from hidden populations (Hendriks et al. 1992). In this research method, users that take part in the study point out new users, so that one can select (snowball effect) from an ever-growing number of respondents. To get the most representative sample, it is important that the first group of approached heroin users, in other words the starting points of the reference lines, is a-selectively chosen. When following the lines one has to be careful that none of the various sub-groups of heroin addicts is over or underrepresented.

This article reports on the research experiences of obtaining access to drug users[2] outside of treatment in The Hague, and also on the choice for starting points in the population. It is an important and at the same time difficult aspect of this type of research that every experience could possibly help other researchers. The research also provides information about the life that drug addicts lead outside of the drug treatment circuit in The Hague. For illustration purposes, this article includes descriptions of locations and quotes from users. These have been adopted from field notes. Results of the -ongoing- study cannot yet be presented; results are expected to emerge in the course of 1996.

[2] The inclusion criteria of this study are: subjects had to be 18 years old or older, had to be dependent on opiates for two years or more, had to live in The Hague or surroundings and should have had no contacts with treatment institutions for longer than two weeks during the past two years.

Ethnographic preparation

The researchers started this study with 'hanging out in the field': chatting to people, establishing informal contacts, and so on. On the one hand, the researchers' faces got known (which increases feelings of trust and therefore the chances of a cooperative relationship), and on the other hand it was possible to obtain information about the research field. Establishing research contacts can be made much easier by the cooperation of a go-between from the research population itself, namely the community fieldworker. Moore has characterized this mediator as follows (Moore 1993):

> *'She played the part of cultural broker, and vouched for my authenticity and legitimacy'.*

It is typical for a community fieldworker to work from his own expertise and experience, which results in knowledge of 'etiquette', rituals and networks in the addict population. Because the fieldworker himself is/was part of the study population, his contribution to the various stages of the research is of great value (Adriaans 1993). First, a community fieldworker is able to pick up on new, relevant developments in and around psycho-active drug abuse. Furthermore, he or she could lend a helping hand in pointing out groups of users, locations, factors that play a role in drug use and perhaps also cooperative key informants[3]. Because there is no overview, which is due to the hidden character and mobility of the research group (floating population), it is not easy for an outsider to gain insight into the research field and to make and maintain contacts (Kaplan et al. 1990). In this study in The Hague, the community fieldworker not only constantly visited the target group but also conducted interviews.

The map

The ethnographic preparation led to a knowledge of (the development of) the present drug scene in The Hague. The collected data were noted down like a 'map', as it were. This map was constantly supplemented and adapted and plays a central part in building up the respondent group. Because it is important to end up with the most representative 'first group of respondents', estimates were made of the nature and size of the groups and the locations where they used drugs. We also took into account the extent to which respondents with a specific background were represented in the sample. Information given by key informants also contributed to this decision. The following sub-groups of heroin users in The Hague can be distinguished: homeless users, older users who use speed, Moroccan users, Surinamese users, female prostitute heroin users, male prostitute heroin users and groups of heroin addicts in Zoetermeer, Scheveningen and Wassenaar, i.e. smaller towns around The Hague.

[3] Key informants can be regarded as experts of the users' world. They participate in the drug use subculture or act around it, as for instance dealers, health workers or police.

A brief history of heroin use in The Hague, as part of the 'map', reads something like this:

> *Around 1970, it became possible to buy heroin in The Hague. The Chinese heroin - Pakistan and Turkish heroin was sold later on as well - was mainly bought by immigrants and (later on) sold by them. At the time, fourteen grams would cost about five hundred guilders, until one was addicted, then prices went up. While in Amsterdam the first treatment initiative was started up, The Hague saw the action group H.O.S.S. (The Hague Relief Foundation for Surinamese) come into existence, which consisted of town centre youths. This happened in July 1974. Their first action was the occupation of a building in a street called "Laan van Nieuw Oost-Indië" asking for relief and treatment for drug addicts. The town of The Hague provided a building, but nothing was actually started up, so that another building was occupied about two years later by the renewed action group "Samen Sterk" (literally: Strong Together). Another two years on, a drug-free centre was started up ("Hofwijckstraat"), which did not flourish either. The general impression of many people who did not personally know the drugs world was that it would not get so bad. In 1973, a building in the "Prinsegracht" was occupied for a second time, which resulted in the S.O.H.D (Foundation Relief and Treatment for Drug Addicts). This Foundation stayed on in this particular building, where the use of drugs was permitted. It was also tolerated that people carried with them several grams of dope, which meant that dealing, though on a limited scale, was possible as well. In addition to influencing eating habits and social behaviour, the Foundation also provided counselling and referrals. The mixed group of users sometimes added up to about seven hundred persons in one day. At some point, complaints about nuisance brought about the end of this relief centre in the "Prinsegracht", after which addicts spread across the town (again).*
>
> *A motivated group of heroin users then moved on to the recently introduced day programme (1983) in a street called "Scheveningseweg", which used a hut as a porch on "Monchy" Square; unmotivated people spread across the town in small groups, and occasionally met up in larger numbers. A huge dealer building in the "Boekhorst" street illustrates this. Between 1987 and 1992, heroin was sold there to users who could enter after showing an identification pass. It was also possible to use the building's address to claim benefits. In the mornings, the so-called 'sick-tips' were provided (a tip of heroin so as not to feel dope-sick any more). In the end, the keeper of the building was arrested. Around this time, we began our fieldwork.*

Gateways

As is the case in every town with a considerable group of heroin users, we could find 'gateways' in The Hague which enabled us to build up contacts with heroin users. These gateways did not always run parallel to the above-mentioned groups. We found four primary gateways:
- outreach work;
- lounge projects;
- street life;
- dealer and/or user addresses.

The first three gateways provided the dealer buildings, where the largest number of respondents were found, especially by reference from and introduction by users themselves.

Outreach work

Outreach workers are in a special position because, professionally, they have contacts with the target population outside of treatment. A confidential relationship with users already exists. From their position, they can introduce the researchers to key informants and also reassure worried users with regard to the integrity of the researchers. We worked alongside three outreach workers. Despite the fact that they seemed to be good mediators, they introduced us to only a few respondents. A disadvantage of using outreach workers was that their work was often focused on a particular group of users, such as Surinamese users or injecting users. However, for the benefit of the research, they distributed information and made available one of their work floors to interview people. Because of this, this floor, which many users already knew, was given the function of field station for the research (Goldstein et al. 1990). Later on, this floor was accompanied by a research van, in which interviews were taken. Most of the interviews, however, were conducted at respondents' homes.

Lounge Projects

The Hague has three lounge projects where visitors primarily consist of harddrug users. None of the projects is explicitly aimed at drug users. That is why there is hardly any specialist knowledge about addiction problems in these places. The lounge projects are:
- A day centre of the Salvation Army, where in addition to coffee, tea and sandwiches, there is also a shower. Consultations with social services take place by appointment. The centre is open for several hours in the morning, afternoon and evening.
- From a crisis centre for the homeless (Kessler Foundation) an old town bus has been parked near Central Station, where soup, coffee and bread is provided. The bus is open in the morning and at night. A user's view on the importance of the soup bus for him:

> *'You can get a few slices of bread and butter and some soup in the bus. Well, there are weeks that that's all I eat. Twice a day, those as well. Last week I ate really well, one hot meal and two sandwich meals a day. Yes, if you scored well, you go to a restaurant, you go out, you can do that for a few days. But the week after that it could happen that you're in the bus the whole week, you just don't know.'*

- The prostitute lounge project, which is visited by female users, is open evenings and nights only. Women visit for a cup of coffee and a chat. A social worker and GP hold consultations there.

From each of the three 'walk-in' centres we obtained permission to walk in and talk to possible respondents. This was particularly easy at the Salvation Army. There, we fairly soon found users who were prepared to participate in doing their first interview (in exchange for payment). An advantage of this gateway was that the researcher was reasonably free to move and could contact users relatively inconspicuously and risk-free. A disadvantage though was that the lounges are set up for specific target groups, usually homeless people.

Street Life

Street life in The Hague is centred in particular streets, near the "Hollands Spoor" station and in some squares in an area called "Schilderswijk". The 'runners' are here: for payment for some dope they take users to a dealer place. A user told us more about how he can afford his drug habit:

> *'Well, I don't really steal, you see ... but, uh, I know a lot of people that I get in touch with, well some of them come to me, well, they want dope and then I bring him to the dealer. He buys, one gram or two grams or if he's had money from social services he might buy five grams. Well, smoke for a while, come round again, like that ... Suppose you want to buy one packet, but you don't know anyone around here, well I know the people. I take you there, we buy one packet, half is yours, half is mine. That day's over then. Like that.'*

Because of regular clearances and a ban on gathering in some places, the scene in The Hague has become more and more hidden. One respondent:

> *'Even last week there were raids in buildings where they deal, around here in the square. Now they sell everywhere in back streets and there are all sorts of tricks, e.g. drop the package on the street or hide it inside a pitta bread.'*

Because of the relatively limited street life we did not find a great number of respondents here. It turned out to be quite difficult to contact addicts on the street without mediation of somebody they know.

Dealer and/or user addresses

A dealer's address is living accommodation or a catering establishment where drugs are sold. The buyer sometimes goes to another place to use it, the 'user address'. A group of acquaintances come together there to use heroin. Sometimes they all put in money to buy together.

To illustrate this, we use a quote from a user who has opened his place for heroin users:

> *'Right now I have a visitor ban. Before this there were a lot of friends in my house, who were using or dealing. In exchange they gave me some brown, which I smoked in a cigarette.'*

These dealer and/or user addresses were the most obvious gateways for the researchers, but also the most difficult ones. A clear advantage of recruiting in places where dealing is (also) going on, is that there was less selection in comparison with the above-mentioned gateways. After all, every user has to buy heroin, no matter which group he or she belongs to. A prerequisite is, however, that the greatest possible diversity in places is visited, which indeed happened during the fieldwork. The atmosphere varied strongly. An example of a home address, where they were dealing:

> *'At 12.30 I was to meet Eddie. He lives in a street in the "Schilderswijk". I entered into a ground floor apartment, a small hall, it was quite dark and through the first door on the left was a room with a bench and a table. In the extension of that room was another room. I sat down in the room and a little bit later Eddie came in from the other room. He's an Indonesian man, well-groomed he was. At that moment there was someone else in the other room (so I found out later). Somebody tapped on the window. He apologized and opened the door. Through the hall he took the other man straight to the other room. He stayed there for a while and I heard the click of lighters so I knew they were using. I assumed that this was the user room. He came up to me again and offered me a drink. I was given a glass of milk. He then sat down next to me on the bench, he asked about the research. During the course of the conversation it emerged that he has certain ideas on drug use and how to handle it. He has principles which make that he doesn't have to join the criminal sphere. For his friends, he gets the dope at cost price. They also use it at his home. Friends or acquaintances he chooses. The people with whom he buys and uses the drugs, all work and have little or nothing to do with crime. He also makes sure that he pays his rent on time and that there's food in the house. In the meantime someone else tapped on the window and he opened the door. Again, he went into the other room. A moment later he asked me if I wanted to join him in the other room. There was a bench, a table and two beds. It seemed to me that I had won his trust because he allowed me in. In here, he sold the dope and let people use it. We stayed there while the other two boys went and sat in the front room so that they could open the door and we wouldn't be disturbed. Eddie started chasing the dragon[4], brown first, then white.'*

Generally in The Hague there are few places where, after drugs have been bought, people can use it quietly. Some dealers only sell to a limited circle of steady friends, which minimizes the chances of tense situations. The rules that dealers set are: no receiving or payment in goods, only allow a limited number of buyers in, fixed opening times, a minimum purchase price, entrance only allowed with someone familiar and the appointment of a security guard. Some dealers use particular codes. By means of agreed signals they indicate that the coast is clear:

> *'Agreed to meet at Johan's address. I'm supposed to rattle the letterbox and shout 'Rotterdam', so that they knew it was me...Now I can pop in whenever I want, when the mat is outside the door he's at home.'*

[4] Chasing the dragon is to inhale damp of heroin or cocaine, which is laying on a tinfoil and heated with a lighter.

Another way to limit the risks of dealing is that the dealer sells at homes of users, who receive dope in exchange, while after a few days the dealer starts to look for other accommodation. It also happens that a user who wants to buy, 'bleeps' the dealer by telephone, after which the dealer pays a visit to his home. The following quote is an example where few measures were taken to protect both security and atmosphere:

> *'When I came in there were three men. They were busy using coke. I thought for some days: day and night. They looked like it anyway, a bit sweaty, with big pupils. During this time they'd hardly eaten anything and had not slept at all. B. is the occupant of the building, who is no longer the 'boss' in his own house. Perry had arrived with the coke. Quite a lot, I don't know how many grams, in a plastic bag which he'd put in an empty packet of cigarettes. Perry said he wanted to speak to me alone and the other two got their user things, e.g. spoon, ammonia. Perry brought out the bag and handed something to them both. After that they sat in the hall and in the loo. Perry began an incoherent conversation in whispers. He acted quite paranoid. He kept looking at the door and said I should keep my voice down. I said it wasn't so bad. There was tension in the air and the longer I was there the more the tension built up...All during this time B. and Mark were in the hall and in the loo. Then B. asked for some coke and said he was fed up having to sit in the hall in his own home. This remark and the fact that he asked for coke was the drop that made the cup run over. Perry got mad and it confirmed his distrust. B. soothed him and said he didn't mean it that way. At first he didn't bother to point out his position of power, later on he did, making a gesture saying 'what do I care anyway'. There was enough in the bag to last him another day and a night. The spoons were brought out and he filled them with a few pinches.'*

Since the building in the "Prinsegracht" in the early 80s, The Hague has not had a permitted area. In consultation with the police, housing associations and the council, it is agreed which buildings will be cleared. There are a lot of raids and police checks as well. The result of this policy is that dealer addresses have become more and more business-like. People quickly get what they need and use it somewhere else. Because of the many changes in dealer addresses even faithful users have not got a steady address where they can buy, and consequently they are confronted with a varying, often dubious quality of heroin, cocaine and other drugs, which increases the health risks.

Table 1. Number of attempts to contact heroin users or to gain access to dealer and/or user buildings, separate for each of the various gateways.

Gateway	Person		Building		Total
	(+)	(-)	(+)	(-)	
Personal mediation	51	24	15	1	91
Day centre	12	3	-	-	15
Via information	6	4	-	2	12
Coincidence /on the street	8	2	-	2	12
Via methadone	3	3	-	-	6
Outreach work	2	1	2	-	5
Total	82	37	17	5	141

(+) successful, (-) not successful

Some conclusions

To gain some insight into the level of success of the researchers to contact heroin users or to gain access to a dealer and/or user place, the number of attempts are represented, separate for the various gateways, in table 1.

For each instance it is indicated whether it concerns a person or a building and whether it was a successful (+) or a failed (-) attempt. Persons who were contacted in the buildings, have not been included any more.

The table shows that the majority of contacts came about by personal mediation: 91 out of 141 attempts (65%). This is of course due to the snowball sampling method. Out of 91 attempts, 25 failed (36%). This can be partly explained by the lifestyle of respondents, which is often dynamic and unsettled, which makes keeping an appointment difficult. Appointments that were planned in the short term were most successful; but the day and night routine of the respondents (prostitutes) had to be taken into account. It is possible that some did not participate in the study because they thought the situation too risky or because the payment was considered too small.

It is noticeable that attempts via personal mediation to access dealer buildings were nearly always successful, namely in 15 out of 16 cases. The dealer buildings that were discovered by accident or of which only the address was known, were not accessible to the researchers.

Recommendations

In order to help other researchers or fieldworkers we have summarized the following recommendations based on our experiences:
- By means of key informants, foundations that have contacts with the target group or via other sources of information, it is important to make a 'map' of the field. This charts the entire group and offers some guidance in keeping track of the many changes in locations.
- A mediator who is part of the study group could contribute considerably to the 'map' of the target group, by making the first contact and maintaining access to the target population. The mediator could be a community fieldworker, of which the advantage is that a long-term relationship with the researcher is begun, in which information is mutually exchanged.
- It is of paramount importance to discuss the purpose of contact with the users and to emphasize that all information will remain confidential. This prevents (a lasting) distrust. Outreach workers could fulfil a reassuring role in this, by vouching for the researchers' reliability.
- Dealer buildings are hardly or not accessible to outsiders, but accompanying a user who buys something (not more than two persons in all) is successful in most places.
- Finally, it is an obvious prerequisite for a successful study that heroin users are treated with respect, without condemning their drug habits.

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CHAPTER 2.3

Snowball Sampling applied among Opiate Addicts outside of the Treatment System

Introduction

Populations without a retrievable sampling frame are often referred to as hidden populations (Goor Van de et al. 1994). These can be characterized by difficulties in locating, gaining access to and recruiting for research purposes. The traditional sampling strategies can not be applied and no equally well developed strategies are available yet for studies on hidden populations. For years researchers had to be satisfied with merely being able to locate `hidden respondents', and accept the fact that the results of their studies could hardly be generalized because of their non random sample. Researchers dealing with different kinds of hidden populations have tried to solve these access and sampling problems with various approaches, as described in table 1.

Table 1. Research on different kinds of hidden populations

Authors	Hidden Population	Methodology
Blumberg & Dronfield (1976)	Opiate users outside of treatment	Information was collected by interviewing addicts in treatment about their comrades.
Nurco & Shaffer (1982)	Street addicts	After a random selection of area's densely occupied with addicts, quota sampling was used.
Rounsaville & Kleber (1985)	Opiate addicts outside of treatment	Formerly addicted treatment staff and addicts currently involved in treatment mediated in locating respondents.
Burnam & Koegel (1988)	Homeless outside of treatment	The size of the group was estimated by interviewing homeless at nine outdoor areas.
Watters & Biernacki (1989)	Drug users with a risk for H.I.V.	`Targeted sampling method'. This contains aspects of many different sampling strategies including quota sampling and chain referral sampling.
Herrero & Baca (1990)	Drug addicts outside of treatment	Drug addicts staying in a general hospital for somatic problems were interviewed.
Martin & Dean (1990)	Homosexual men	Random selection from registers in combination with identifying hard-to-locate networks by personal referral.

None of their solutions compensated completely for the lacking sampling frame. Of the different approaches that were described snowball sampling seemed most appealing. However, `snowball sampling' is a broad concept. It covers different techniques, which all have in common the aspect of meeting members of the goal population with the help of previous respondents. Traditionally every located person is interviewed. Implementation of

some form of randomization in this referral procedure may improve the technique. This is realized by making a random choice out of a set of possible respondents, in stead of asking every person who is located by earlier respondents.

This type of snowball sampling with random nominee selection has until now only been used by a handful of researchers in various countries (Avico et al. 1988, Diaz et al. 1992, Intraval 1992, Hendriks et al. 1992, Cohen 1990). For instance in a study of Cohen 160 cocaine users were interviewed (Cohen 1990), of which 117 were approached by the snowball sampling method with nominee selection. Edwards (1991) discussed the use of this method as well as the nature and representativeness of the obtained sample. From his comments could be concluded that further research should be aimed at the practical implementation of the method during the fieldwork and bias that may occur should be emphasized. Therefore in this article an attempt is made to contribute to the development of sampling theory for hidden populations, specifically in the field of addiction, by relating the practice of the fieldwork to the theoretical concepts of snowball sampling with nominee selection in order to bring both closer together. This aim is worked out in the following questions: 1) Can snowball sampling (with random nominee selection) be applied in practice (among opiate addicts outside of the treatment system in The Hague)? 2) To what extent can a random zero-stage sample be formed? The zero-stage sample refers to all first respondents of the snowball chains. 3) Which types of bias may occur during the fieldwork?

Theory on snowball sampling

Concepts of snowball sampling

The snowball sampling method was developed by Goodman (1961), who was inspired by the work of Coleman (1958). Goodman described the method and the nomination process in mathematical terminology. The central idea is that every individual in a certain population can nominate other individuals in that population, which have an equal probability of being nominated. The nominated individuals are again asked to nominate other individuals. In repeating this procedure many individuals of a certain population can be met in a relatively short time. To acquire a sample that approaches a random sample as close as possible, a very important condition is that the first group of respondents (zero-stage) should be selected randomly.

Rapoport (1957) described the snowball sampling method from a mathematical point of view as a process of infection. In a certain population an element can be infected or not and the process of infection takes place through social contacts. The chance of an element being infected and the probability of all elements being infected in the end, can be computed when a fixed number of equiprobable contacts is set per element. However, this mathematical model cannot be used unconditionally in reality. Equiprobability of the contacts is not a characteristic of social relations, that differ in frequency, distance and intensity. Therefore this mathematical model has to be developed towards practice.

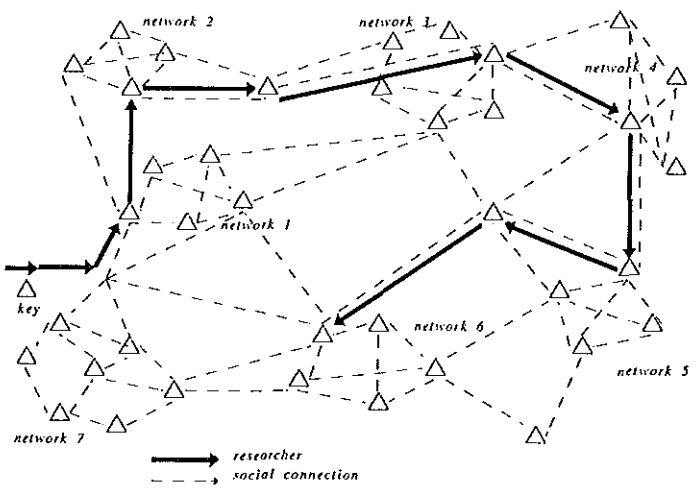
TenHouten (1971) refined Goodman's theory. In a study of political leadership he showed that site sampling could be a solution for the required condition of a random zero-stage sample. `Site sampling' can be described as a sampling procedure in which the target population is divided with regard to place (where are the subjects) and time (when are the subjects there) (Hendriks et al. 1992). The number of persons that should be interviewed at every site is determined by assigning weights to the number of people attending at every site, the estimated size of the total population and the extent of exchanges between different

sites (mobility). After the random selection of a person at a site, snowball sampling is used to select more respondents.

Stages in snowball sampling

The underlying assumption of applying the snowball sampling method in general and thus also among heroin users, is that the members of the hidden population aimed at do not live completely isolated, but on the contrary have intensive social relations. This is true for the drug using population. From this point of view personal networks can be distinguished in a social surrounding. Spreen defined a personal social network as the social relations of an individual with other individuals together with the social relations between these individuals (Spreen, 1994). In this definition a population then is formed of a number of personal networks, links between these networks and a number of outliers. Figure 1 shows how the researcher moves through the networks, by applying snowball sampling with nominee selection.

Figure 1. Applying the snowball sampling method with random nominee selection.



The snowball sampling method basically consists of the following phases (see figure 1):

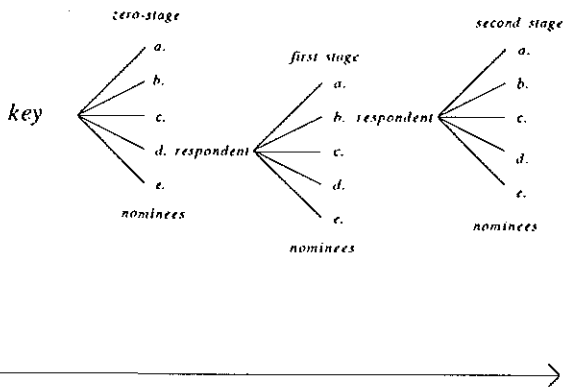
a) *Network map.* A best possible description is made of the goal population in totality and in subgroups. This results in a concept map with social networks. Depicting the observed social relations from the field on the map enables choosing starting points in separated networks.

b) *Referral procedure.* In every starting point a key informant is asked to nominate and contact individuals of the goal population, who meet the inclusion criteria. Key informants originate from various user groups or act around these groups as dealers, professional and voluntary workers in the health care system, community centers, police, etc. (Blanken et al. 1995). The interviewer notes for every nominee certain socio-demographic features, data about type of drugs used and administration of drugs on a snowball referral form. One person is chosen from the nominees with a dice and the referring person is asked to mediate in contacting the selected nominee.

c) *Interviewing.* When the randomly selected person is met, he or she is interviewed. Then the referral procedure is repeated for the next respondent.

d) *Repeating the procedure.* Every group of nominees (see figure 2: a,b,c,d,e) represents a stage. A line of respondents-referral-respondent-referral through the stages formes the snowball chain. A chain stops when no more nominations can be given or when the selected individual is not found or refuses to participate. In this way several chains can be created through a population.

Figure 2. Constructing a snowball chain



Types of bias

An important contribution of Rapoport (1957) is the identification of formal parameters which may cause bias in the obtained sample.

1. Social distance bias: the probability of social contact between two individuals is a function of the social distance between the individuals.
2. The 'island model': subgroups of individuals exist, within which the connection probabilities are random, but among which the chance of connection is limited.
3. Overlapping acquaintance circles: if no connections exist between several subgroups of individuals, different subgroups can be connected by individuals who are members of more than one subgroup.
4. Reflexive bias: a referral from an individual to a next individual theoretically enlarges the chance for the first individual of being nominated again.
5. Force field bias: some individuals will have an increased chance of being nominated, due to certain characteristics such as popularity.

Application of the snowball sampling method in The Hague

In this section is described how the snowball sampling method was applied according to the theory.

The wider study

The snowball sampling procedure with nominee selection is used in the scope of a wider study performed in The Hague, a medium sized Dutch city. This study is aimed at describing similarities and differences in drug use and drug related problems, that exist

across the population of addicts in and outside of the treatment system. In total 344 opiate addicts are sampled in four settings: a methadone programme, a clinical detoxification center, a drug free therapeutic community and outside of the treatment system. Three interview instruments are used: First the Addiction Severity Index (ASI) (Hendriks et al. 1989) measuring several variables concerning drug use and drug related topics. Second the Composite International Diagnostic Interview (CIDI) (Robins et al. 1989) measuring psychiatric (DSM-III-R) disorders. And third a qualitative interview measuring the experience of the heroin addiction, problems with drug use and on other life areas and reasons to seek professional help. This was administered to 48 respondents.

In the treatment settings consecutive samples were drawn, among addicts who applied for the specific settings during the two and a half years of data collection. Outside of treatment snowball sampling was employed. Site sampling could not be used. Reason for this was that a requested recent and complete review of meeting places of drug users, as Ten Houten (1971) describes, is very hard to obtain because of the hidden character of the activities of this 'floating population'. Among the respondents without treatment contacts the total set of three interviews could not be finished in one day, therefore at least two appointments had to be made with the respondent. All respondents outside of treatment were paid for their participation.

Snowball sampling applied in The Hague

Experiences during the three most elementary phases of snowball sampling will be summarized. These phases are: developing a network map, the referral process and the interviewing.

A network map. The information for the map was not easy to collect. The users had difficulties with describing their subculture at a population level and outreachworkers in the field were less cooperative than expected. After four months of fieldwork the first map was constructed, which was improved upon during the remaining one and a half years of fieldwork. The networks were indicated by one most important characteristic, which could be a specific way to achieve money, typical drug use, a demographic characteristic or a certain geographic location.

* Homeless heroin users, the entrance to this network was found through daycenters for the homeless.
* Users of heroin and amphetamines, which were older. They were located in squats in a certain area.
* Surinam heroin users, among which were relatively many dealers.
* Female prostitute heroin users. This group was hard to approach because of their reversed day/night rhythm. At night they were too busy with working and at the daytime they slept. Possibly they were not interested in the amount of money we paid too, because of their own good earnings.
* Male prostitute heroin users, who work at night in a certain park in The Hague.
* Heroin users in the suburbs. Several fairly closed groups in the suburbs of The Hague were approached, which were quite different in nature. For instance a cocaine oriented subgroup was discovered in an area called `Zoetermeer', while in an area called `Scheveningen' a very hidden scene was located with mainly heroin use.

The referral procedure. In the beginning of the fieldwork period, it was difficult to execute the referral procedure. Locating the nominated individual failed many times. Reasons for them not wanting to participate were hard to obtain because all communication with the new respondent was intermediated by the already interviewed respondent. Paying the already interviewed respondent for guiding us to the selected nominee turned out to be a way to improve the results, which we introduced after about 30 respondents. In contrast with the difficulties of purposively developing chains, sometimes an unexpected meeting allowed a set of interviews to be finished or enabled a new start of a snowball chain.

The interviewing. When a respondent was selected and met, it turned out to be important to create optimal conditions for an interview. Finding a quiet location was our first concern and this was sometimes difficult to obtain. After having experimented with interviewing in the restaurant of the railway station and in a little room at the center for homeless we created two field stations. The first was a room of an outreach worker which was familiar to the heroin users. The second was a mobile field station: a bus accommodated for interviewing. In addition to these quiet places many interviews were performed at the homes of the respondents. Interviewing users who are influenced by heavy drug use or strong withdrawal symptoms may decrease the quality of the answers. From excessive heroin use the respondent fell asleep, while too much cocaine use resulted in restless activity. In those cases we replaced the interview to another time. When the respondent was 'dope-ill' because of withdrawal symptoms, we suggested to interview the respondent after having consumed some drugs in order to stop the physical complaints.

Results of the fieldwork

Application of the snowball sampling method with nominee selection in The Hague resulted in the following sample of respondents outside of the treatment system: 62 persons without treatment contacts were recruited. The first 26 heroin addicts were interviewed without using snowball referral forms. The subsequent respondents were randomly chosen out of 243 nominees. These were mentioned in 21 snowball chains, with an average length of 2.1 stages. The number of nominees per respondent varied from one to nine, with an average of 2.8. Two types of non-response were observed. In the first type the nominee could not be located or refused to participate at all. In the second type the respondent did not show up for the second appointment. Therefore the set of interviews could not be finished. When this occurred the snowball procedure could not be used either. The non-response of both types existed of 26 persons in total (some possible snowball chains did not even start, because the first nominee was not reached).

A way to determine the quality of an obtained sample is to compare it with the socio-demographic characteristics of the sampling frame. Since such a sampling frame was not available in this project, the total pool of nominees was considered a substitute sampling frame. Similarity of socio-demographic characteristics of the sample (interviewed nominees) with the total pool of nominees (not interviewed) is then considered an indication for the representativeness of the sample (Hendriks et al 1992).

With the data collected by the snowball sampling method in The Hague this comparison was performed on gender, age, ethnicity, type of drugs used and modes of administration (see table 2). The conclusion is that the interviewed nominees (N=62) do not differ from the other nominees (N=181) in gender distribution, ethnicity and drug use. With respect to age were the respondents slightly older than the nominees. Small differences also were found

regarding mode of administration. A larger percentage of respondents used a base pipe compared to the nominees, of which a larger percentage 'chinesed' their drugs more often. Chinesing (or chasing the dragon) is laying heroin or cocaine on a tin foil, heating it with a lighter and inhaling the evaporated drugs through a tube of rolled paper.

Table 2. Socio-demographic data, type of drugs and mode of administration

	Respondent n = 62	Nominee n = 181
Gender		
men	76%	72%
women	24%	28%
Age		
15-25	21%	21%
26-35	40%	52%
36-45	32%	25%
> 45	7%	2%
Ethnicity		
Dutch	60%	67%
Turkish	0%	1%
Moroccan	8%	6%
Surinamese	11%	14%
Moluccan	2%	2%
Other	20%	10%
Type of drugs		
cocaine	85%	83%
alcohol	10%	5%
amphetamine	10%	5%
Mode of administration		
inject	18%	16%
chinese[1]	92%	87%
base[2]	44%	59%

[1] Chinesing (or chasing the dragon) is laying heroin or cocain on a in foil, heating it with a lighter and inhaling the evaporated drugs trough a tube of rolled paper.
[2] Smoking rocks of boiled cocain on ash in a little pipe is called basing.

With respect to the first question it was found that the snowball sampling method could be employed successfully in The Hague. Although the referral procedure appeared not to work out in the beginning it was more successful when an amount of money was provided for bringing the researchers in touch with the selected respondent.

Theoretical bias at the emperical level

Section two described how several factors may threaten the quality of the obtained sample. It was discussed that obtaining a random zero-stage sample is a basic necessity at the practical level. How this can be approached is examined in this section.

Zero-stage

The requested condition of a random zero-stage sample can be approached by the following activities (Hendriks et al.1992): a) Start every snowball chain in a separate network (network map) and employ the random nominee procedure. b) Use long snowball chains

with not too many referrals to look-a-likes (these are nominations with similarity at a certain characteristic). These activities might compensate for the requested randomness in the zero-stage sample.

a. Starting chains in as different as possible networks. In the fieldwork of this project an overview of networks was formulated in two ways. First a social network map was made as described in the snowball sampling procedure. In addition to this social network map a geographical district map based on data collected with a survey among district police men was used. The information from the two procedures was complementary and resulted in identifying two extra locations with 'new' networks of addicts.
b. Length of the snowball chains. The chance on a (near) random sample increases when long chains can be formed, resulting in a larger number of approached networks. The average length of the snowball chains in this research project is 2.1 stages. This is comparable to Cohen's results (1990), who found a mean of 2.0 stages in the snowball chains. However, the maximum length of the chains differs considerably in the two studies. Cohen found a maximum of four stages whereas our maximum in The Hague was seven. In The Hague it was found that the chains became longer when the set of interviews was reduced from three to two, which could be completed in one session. In general there are no objective guidelines yet for which chain lengths are acceptable.

The positive influence of longer snowball chains only counts only if not too many look-a-likes are nominated. With the data in this study the percentage of respondents that nominated similar addicts at certain characteristics (look-a-likes) (Hendriks et al. 1992) can be determined. A condition that should be satisfied when working with this procedure is that double nominations of the same person should be removed. Because the fieldwork was done by only two researchers who continuously exchanged information about respondents and dealing places it was possible to remove the double occurrences, marked with the first name, from the nominee pool. Not all nominations were used, because some of the socio-demographic data were missing for the respondent that provided the nominations.

Nominator and nominee were compared at several characteristics in order to check for look-a-likes. The characteristics used are area of residence, age, gender, ethnicity, type of other drugs used and mode of administration. Table three summarizes the percentages of referrals to similar addicts per characteristic. This percentage ranges from 39% to 75%. Furthermore the category with most nominations to similar addicts was described. For instance for the characteristic gender 75% of the referrals were from men to men. An explanation for the high percentages in e.g. gender is that the number of look-a-likes relates clearly to the number of categories for a certain characteristic, in this case two, and the probability on falling in a certain category. This probability is unknown for the population. Because of the larger number of men in the population, the chance that a man refers to a man is larger than the chance of a woman referring to a woman. This counts as well for area of residence (the majority of the addicts lives in the area downtown) and drug use (the main part of the users uses heroin with cocaine).

Table 3. Percentages of look-a-likes at various characteristics of the The Hague referral data.

	number of usable referrals	total % of referrals to similar users	largest group with similar referrals
a. area of residence	228	58%	area `downtown'
b. age	236	43%	26-35 years old
c. gender	248	75%	men
d. ethnicity	177	50%	Dutch
e. drug use	126	60%	heroin and cocaine
f. mode of administration	101	39%	chinese and base-pipe

To what extent could these two activities aimed at creating a random zero-stage sample be met in The Hague? The first activity was starting the snowball chains in as many as possible separated networks. In order to achieve this a high quality network map needs to be developed during the fieldwork. The second was creating long chains without too many referrals to look-a-likes. At first sight the long chains could not be realized in The Hague; the average chain length was about 2.1 stages. Reasons for this small average length are partly found in practical barriers. In order to complete the set of three interviews, at least two and often three appointments had to be made with the respondent. Due to the dynamic life style of the addicts many missed appointments occurred, which negatively influenced the chain development. In a later stage of the fieldwork enough qualitative interviews were collected and therefore the number of interviews could be reduced to two, which could be completed in one day. Chain lengths of five or six persons were then easier obtained.

Types of bias

Types of bias in social networks

This section discusses to what extent the formal biases identified by Rapoport (1957) as described earlier were recognized in the networks of heroin users in The Hague.

Social distance bias. This first type of bias refers to the unequal social proximity of the elements around a nominator. Compared to the mathematical snowball model social distance is a distortion of the equiprobability of the `elements'. The fieldwork showed that a referring person indeed selected socially close persons who knew him well and trusted him. This increased the chance on their participation. For instance users often nominated their partner. The fact that the respondents were asked to locate and approach their selected nominee as well, probably increased the chance on this type of bias. The more often they used to see the nominee, the easier a meeting could be arranged.

The `island model'. Subgroups of individuals exist, within which the connection probabilities are random, but where a finite probability exists in crossing from one such subset to another. If the structure of a total population consists of island model networks working with snowball sampling is complicated, because the progression through the different networks can not take place. In The Hague examples of island model networks were found in the suburbs, where respondents only nominated addicts from the same suburb. Except for the suburbs of The Hague the networks appeared to be well connected. Because of the forced

mobility of the dealers by clearances of the police, many heroin users stay in touch with the 'scene' to obtain important information about dealing addresses.

Overlapping acquaintances circles. Sometimes an individual is a member of two or more networks, instead of two nets being connected by a relation between two members of different networks. For the progress of the snowball chain, there is not much difference in the two types of connection between the nets. However, these individuals have a larger chance to be nominated, which can be considered as a type of bias. The networks we observed in The Hague were not often connected by overlap. Whereas this type of overlapping networks is easily recognized in non addicted persons, who participate in different types of activities, the addicts seemed more often connected by two members of different networks and more specifically by several persons who moved freely through the networks and provided connections.

Reflexive bias. In theory a selected nominee could refer back to his or her nominator or to an earlier interviewed member of the population.

The first option did not occur in the fieldwork experiences. Evidently it was clear to the respondents that we needed to progress through the population by meeting more not yet interviewed addicts. When the second option happened the interviewer asked the respondent to name another user. This occurred only a few times. Which could possibly mean that the obtained sample does not represent a very tight group.

Force field bias. This bias suggests that individuals with certain characteristics (for instance popularity), have a greater or smaller chance of being nominated.

This was recognized to some extent in that dealers were known by many users. Some dealers in The Hague receive between 50 and 100 persons a day. Although the relationship with a dealer is not considered a friendship but rather an economical relation, the chance for the dealing person to be nominated is substantially larger. Another example is a female user that joined the junkie union. This is an interest group for heroin users, which represents the opinion of users in public debates. Out of her central position in the total group, she was part of many personal networks and consequently was nominated more often.

The third question focussed on what types of bias could be recognized during the practice of the fieldwork. Of the biases described by Rapoport (1957) island model bias and social distance bias were most clearly observed. Island model bias might be a real threat to the development of the snowball chain. Although social distance bias appears to be helpful in creating longer chains, it is not desirable. Making a good map of the networks may help to prevent this type of bias. An improvement directed at minimizing the effect of social distant bias is to ask the respondents to name three heroin users with little social distance and three heroin users with a larger social distance. Though of the remaining types of bias some examples were found, they did not seem of major influence on the nomination process. However, these distortions should be worked out further before their exact influence can be estimated.

Conclusion and discussion

Conclusion.
With respect to the three questions in this publication it can be concluded that snowball sampling with nominee selection could be employed in The Hague. Difficulties were experienced with the random nominee selection procedure, however, when the respondents were paid for locating the next respondent, it worked well. If a zero-stage sample among opiate addicts in the community is truly random can not be determined because of the missing sampling frame. Describing the social networks on a map and starting a chain in every network is one way to approach representativity of the zero-stage sample to the total population. Another is creating long chains of respondents. Both were practiced in The Hague. The latter was realized more easily after restricting the interview time to one appointment in stead of two or three and after paying the respondent for locating the next individual. Of the different types of bias island model bias and social distance bias could to some extent be recognized during the fieldwork.

Discussion.
Among sampling methods for hidden populations snowball sampling with addition of a randomization procedure to the referral process is rather new. To what extent does it positively influence the representativeness of the obtained sample? Although in this article no final judgement about the sample resulting from the snowball sampling method with nominee selection can be given, we observed that a larger segment of the population was reached due to using the randomization of the nominees. This wider pool out of which respondents are randomly chosen may have a positive effect at the randomness of the final sample.

A considerable gap between snowball sampling in theory and in practice was found during the exploration of the research questions. Two options are given to try to join theory and practice. The first is to perform computer simulations of the nomination technique. Consequently norms of acceptable chain lengths and percentages of look-a-likes might be computed, as well as corrections for the biases described by Rapoport. Furthermore these simulations would enable an evaluation of the representativeness of the sample obtained by this type of sampling for hidden populations. The second option to convert the snowball theory into practice could be to perform an experiment in which the snowball sampling method would be applied to a population with a known sampling frame. Then the snowball sample and a traditionally drawn, random sample from the same population could be compared and discussed.

Until theory and practice of snowball sampling are worked out into practical guidelines to improve the representativeness of samples and reduce biases, sharing experiences with the application of this snowball sampling method in different scientific projects may help to obtain a coherent random sampling procedure for hidden populations. An important initiative in this direction is the handbook on snowball sampling, which is currently being developed (Pompidou group 1995).

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Supplement 2.4

Sampling strategies for respondents in treatment and non-response

In the three treatment settings the respondents were selected on the basis of consecutive admissions during the two-year period of data collection, which started in March 1993. The number of new clients per year was largest in the methadone programme. In this setting every third new client was approached by treatment staff. Informed consents were obtained from all respondents. The three instruments (described in chapter 2.1) were not employed simultaneously. The ASI^R interview was part of the intake procedure. If respondents agreed to participate in the study and they filled in the informed consent, the ASI^R interview was requested from the administration. The researcher listed the new clients of all treatment settings in a computerized registration program. A special code (date of birth + last three letters of surname) was used to guarantee anonymity. In this way double participation in the study could be avoided. After the respondent had been part of the methadone programme for two weeks (necessary because of the inclusion criteria), the researcher asked the staff to conduct the second interview (CIDI). On their daily visit to the methadone bus, respondents were invited for a separate appointment in the main building (a different location). From the outset, this appeared to cause a barrier with respect to the CIDI's data collection. Therefore the researcher began collecting CIDI interviews of methadone clients in the research bus, which was parked nearby the methadone bus. When this proved successful, methadone staff were convinced that conducting CIDI interviews was not an impossible task and they were motivated to try again. In support, the original procedure was expanded by offering respondents a financial compensation of 25 Dutch guilders for a two-hour (CIDI) interview in the main building. Although this news spread rapidly among the methadone clients and resulted in several requests for participation, only the selected respondents were allowed to be interviewed. The third, ethnographic interview was conducted by the researcher. Again, respondents were invited on the methadone bus and interviewed in the main building. Partly because of the difficulties with starting up the CIDI interviews, a total of 26% of the selected respondents refused participation or did not show up at the appointment. However, the demographic characteristics of these clients did not differ from those clients that were interviewed in the ASI^R and CIDI.

In the detoxification programme the ASI^R interview was also part of the intake procedure. Although many addicts set foot in this setting, many of them did not meet the inclusion criteria because they did not use heroin or came from another area in The Netherlands. Therefore they could not be interviewed. Heroin users that met the inclusion criteria were included in the registration program of the researcher. During the first few weeks it turned out that staying in treatment for two weeks (inclusion criteria) was not an appropriate period of time. Some heroin users completed the detoxification programme in less than two weeks and were consequently missed out for the study. Respondents in this setting were therefore approached for the CIDI interview after about ten days of participation in the detox programme. Informed consent forms were filled in at this time and afterwards ASI^R interviews were requested from the administration. The treatment setting employed two persons educated in psychology to conduct these interviews for the study. Interviews were held in the setting itself or in a building nearby. No financial compensation was offered. The researcher conducted the third ethnographic interview in the same setting without financial compensation. Of the clients approached for the ASI^R and CIDI interviews, 9% was missed

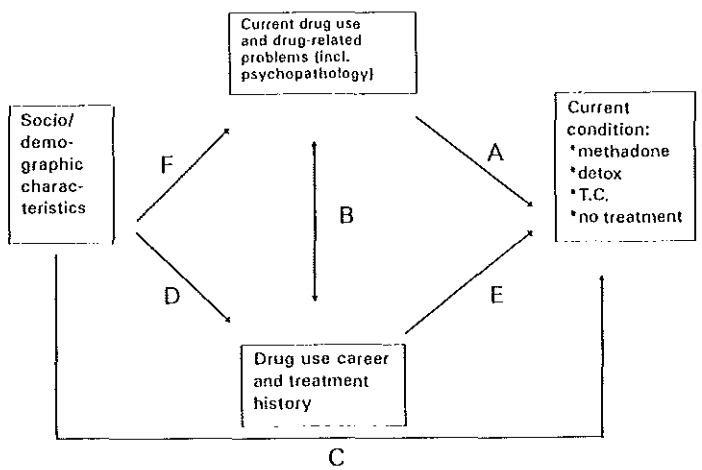
out. Most of them left the treatment setting before the interview could be conducted, at the start of the data collection. Another source of non-response was created by ASI^R interviews with respondents that could not be retrieved by the administration of the treatment institute. This was an unexpected loss of valuable information, due to communication mistakes between the separate departments (intake unit, treatment) of the treatment setting. Another 11% of respondents were lost because of this. Demographic characteristics of the lost respondents did not differ from those of the interviewed users.

Participation in the therapeutic community was always preceded by a detox period. When a detox client decided to continue his or her treatment in the therapeutic community, and stayed there for at least two weeks, the respondent was classified for the therapeutic community group. This means that all inpatient respondents (both detox and TC group) have been interviewed in the detox setting. The non-response numbers for this setting also include those for the therapeutic community sample. There was no payment for doing an interview in the inpatient settings, because this was incompatible with the treatment institute's policy.

3. Problems with drug use and problems in other life areas

This section describes differences between addicts in the study groups, based on the results of the data that were collected with the ASI^R (n=327). Differences in drug use and comorbid problems (medical, employment, legal, social, psychological) are presented as well as differences in drug use career and treatment history. Figure A illustrates (in a simplified way) how the main variables in the quantitative analyses of this study are related. Chapter 3.1 of this section describes differences between the four study groups at item level of the ASI^R. This is illustrated in the figure by relation A. For each of the four study groups a profile of characteristics is presented, based on drug use problems and comorbid problems. This was a first orientation on possible differences between the groups. The results have not been adjusted for confounding influences of demographic characteristics (relation F). In chapter 3.2 relation A is described at a more general level by severity ratings per life area of the ASI^R. In addition to a comparison of problems, the groups are also compared with respect to feelings of concern and the expressed need for help in the different life areas. Furthermore in this chapter, it is evaluated to what extent these data fit a model for help-seeking as described by Power et al. (1992). In chapter 3.3 differences between the four study groups are discussed in terms of demographic characteristics and long-term variables, such as drug use career and treatment history. These relations are represented in Figure A as relations C, D and E.

Figure A. Simplified diagram of analysis.



The chapters of this section are based on the following papers and manuscripts:

* M.A. Eland-Goossensen, L.A.M. van de Goor, W.J. Benschop & H.F.L. Garretsen. Profiles of heroin addicts in different treatment conditions and in the community. Accepted for publication in Journal of Psychoactive Drugs.

* M.A. Eland-Goossensen, L.A.M. van de Goor, H.F.L. Garretsen. Heroin addicts in the community and in treatment compared at severity of problems and need for help. Substance Use & Misuse, in press.

* M.A. Eland-Goossensen, L.A.M. van de Goor, H.F.L. Garretsen. Drug use career and treatment history of opiate addicts in and outside of treatment. Journal of Substance Misuse, in press.

CHAPTER 3.1

Profiles of heroin addicts in different treatment conditions and outside of treatment.

Introduction

The treatment seeking behaviour of heroin addicts can be characterized as dynamic, in the sense of applying for many different types of treatment, with relatively little success. According to the differentiation in help-seeking behaviour, which varies between harm-reduction and total abstinence, the drug treatment system has evolved to a broad range of possibilities. On the one hand this broad range of programmes is aimed at an optimal accessibility of the treatment system, on the other hand at the best possible connection between offered help and demand for help.
In the past decades several studies were performed with a focus on the evaluation of drug treatment programmes (Fisher & Anglin 1987, McLellan et al 1982, Simpson et al 1982, Kooyman 1992, Schaap 1987) or drop out behaviour (Platt & Metzger 1987, Craig 1984, DeLeon 1984, Kok 1994, Verdenius 1994). Relatively new for drug addicts is the topic of 'matching'. Categories of addicts and several types of treatment are studied in order to come to better combinations and consequently to better treatment results. Though many of the studies about matching were performed with respect to alcohol addiction (Del Boca & Mattson 1994, Annis 1988, Finney & Moose 1986), McLellan et al. (1980) studied a sample of narcotic addicts as well. He described with respect to drug addicts that a global rating of psychiatric severity (low, mid or high) was the single best predictor of the treatment success, regardless of the type of treatment that was chosen. When respondents were divided in three subgroups according to their psychiatric severity, matched to different treatments, and compared with a control group, he found that the effectiveness of the treatment was improved (19%) by matching patients to the most appropriate programmes.

Though the need for more effectiveness in the treatment of drug addicts is widely emphasized, it is not totally clear which differences exist between addicts that are reached by different treatment modalities. Therefore a first step in the direction of client-therapy matching is systematic comparison of nature and extent of drug use and accompanying problems between clients who apply for self-selected treatment institutions. The next step would be to determine the success percentages of these addicts in their self-selected programmes. Then an experiment as McLellan et al. did could be performed, to assess the differences in success by self-selection or assignment to a treatment programme. However, at this moment it is important to find out if the problems of heroin users who apply for different types of self-selected treatment programmes are comparable. And to what extent psychiatric severity is a discriminator between different treatments. Therefore the central question in this article is: What are the differences and similarities between addicts in four conditions: three groups in different treatment settings and a group outside of treatment. The treatment conditions represent the mainstream treatment modalities in The Netherlands. These are an outpatient methadone programme, a clinical detoxification centre and a drug free therapeutic community. Information about addicts outside of treatment is useful in order to describe the unexpressed need for help (experienced but not yet verbalized).

In figure 1 the typologies of heroin addicts, that were found in the research literature, are summarized. The reviewed profiles are based on different types of data, as for instance information about income, psychological characteristics or criminal activities. Some of these classifications were more appropriate for the current publication than others, as for example the classification of Cancrini et al. (1988), in which implications for treatment were already connected to the profiles. None of these studies described addicts in different treatment settings, therefore the current study adds something to the existing literature.

Methods.

Subjects were 310 opiate addicts, aged between 18 and 54 years, with an average age of 31 years old. Of the total group were 80% men and 20% women. They were interviewed either in or outside of a treatment setting in The Hague, a medium sized city in The Netherlands with 443.000 inhabitants. All subjects were required to meet the following criteria: (1) opiate dependency according to the DSM-III-R criteria for the past two years or longer, (2) at least 18 years old, (3a) in the treatment groups the respondents should have stayed a minimum of two weeks in the specific setting before their interview was used and (3b) outside of treatment the respondent had to have no treatment contacts that lasted longer than two weeks during the past two years.

The heroin addicts in this descriptive study design were sampled in four groups:

Outside of treatment group: 81 addicts were interviewed in the community. They were located and interviewed by a community fieldworker (someone who knows the ins and outs of the drug using culture and is trained in interviewing) and the first author. The respondents were selected and reached by snowball sampling with random nominee selection. First different networks of community addicts were described carefully on a map. In every network a randomly selected addict was interviewed, who nominated up to six other heroin addicts of which the next respondent was selected randomly. In this way 21 chains could be formed with a maximum of nine stages. During the total fieldwork period of nearly three years information was collected about networks of heroin addicts that might have been missed. The method has been discussed further in another publication (Eland-Goossensen et al. In press).

Methadone group: 90 addicts were sampled in the methadone programme. They were selected from the intakes by interviewing every third addict that applied. The methadone programme has an outpatient character, in which the methadone was distributed daily from a bus at several 'stations' through the city. Both clients with a reduction treatment and a maintenance treatment were included. In this outpatient programme the addicts were invited by a letter to come to the head office for being interviewed. This resulted in 34 addicts who did not show up, were not interested, or became in jail before the interviewing could take place. The socio-demographic characteristics of the non-response group did not differ from the interviewed group.

Detox group: The detoxification center is part of a treatment circuit for addicts. Detoxification takes place by methadone reduction. In this setting 58 heroin addicts were interviewed, who did not continue their treatment with a therapeutic community (detox-only). In the inpatient settings consecutive samples were drawn of addicts attending for treatment during two years. They could not be selected randomly since all applying addicts were needed to reach the sufficient sample sizes. Therefore all addicts that passed the inclusion

Figure 1. Literature review on profiles of heroin addicts.

Authors	Methods	Typology	Description
Nurco & Shaffer (1982)	N = 230 black and 230 white addicts, a factor and cluster analysis was used.	6 types were described with criteria on amount of income, adequacy of income and work.	Successful criminals, street addicts, losers, working addicts, conservative addicts, moochers.
Cohen (1986)	N = 663 drug addicts in methadone programmes and at a TC a cluster analysis was used.	9 types of addicts were characterized, based on socio-cultural background and psychological make-up.	The emotionally sick addict, the normal addict, professional criminal addict, inadequately socialized addict and the sensation-seeking addict.
Faupel (1987)	N = 30 hard core heroin addicts, analysis of in depth life histories.	4 types were identified, based on 2 contingencies: drug availability and life structure.	The stabilized junkie (high/high), occasional user (high life structure/low availability), free-wheeling junkie (low life structure/high availability), street junkie (low/low).
Cancrini et al. (1988)	N = 131, analyses were performed on information collected during therapies by questionnaires and observation.	A classification based on personal and family problems, existing of 4 types which were coupled at certain types of treatment.	The traumatic drug addict, the addict with 'actual neurosis', the transactional drug addict, the sociopathic drug addict.
Swierstra (1990)	N = 40. Qualitative analysis combined with quantitative information.	3 types were described, based on drug careers and criminal activities.	Type I: highly criminal addicts. Type II: low criminal addicts, older, long drug career. Type III: ex-addict, ex-criminal, short drug career.
Grapendaal et al. (1991)	N = 150, of which 105 were in a methadone programme and 45 not. Information from a questionnaire combined with information from biographical interviews.	An economical typology based on acquisition criminality, activities on drug market and legal salaries.	Normalized user, dealing user, criminal user.
Bieleman et al. (1993)	N = 62, analysis of in depth life histories.	7 different types are distinguished with respect to drug use and the way heroin addicts react on drug policy measures.	The original criminal, the 'instrumental' criminal, the pragmatic user, the delinquent user, the intellectual user, the withdrawn user.

criteria were approached for the interviews. In the detox setting the interviews of the respondents who left the setting before the requested two weeks (n=17) were not used. 20 interviews could not be retrieved by the treatment setting. This group (n=37) did not differ from the interviewed addicts on socio-demographic characteristics.

TC group: A consecutive sample consisting of 81 addicts that followed a therapeutic community programme after their detox period. Respondents were interviewed during the detoxification period, by the same procedure. Non-response is discussed above.

The instrument used to collect the data is the revised Addiction Severity Index (ASI^R) (McLellan et al. 1980, Hendriks et al. 1993). With the ASI^R information is collected about demographic features and about six problem areas. These areas are 'physical health', 'employment', 'substance use' (including alcohol use, heroin use and use of other drugs), 'legal functioning', 'social relations', 'psychological functioning'. Both life-time and recent problems are addressed.

The differences between the groups on item-level of each area of the ASI^R are tested separately and the results are described in section three. A chi-square analysis was used for percentages and analysis of variance for means. A p-value of 0.0125 or smaller was taken according to the Bonferroni correction (Altman 1991) for comparisons of more than two groups. Because this correction is conservative, some significant results may be not be described. Therefore few tendencies to significant results (with still a P-value smaller than 0.05) are mentioned in the text as well. When an overall significant result of all four groups appeared, further tests were performed to detect which two groups differed. The significant results are indicated in the tables.

Results

The results are presented in sequence of the life areas in the Addiction Severity Index. On the life areas physical health and alcohol use no differences were found.

Demographic features.

Although it was expected that the group outside of treatment would contain more young (experimenting) users, with a relatively short heroin career, the results showed otherwise. The group outside of treatment was characterized by the highest average age (33.6), which differed significantly from the detox group and the TC group. This is indicated in the table as follows: 33.6^{DT}. This result was specified by defining age categories, which showed that the percentage of users younger than 25 were least represented in the group outside of treatment. The respondents in the methadone group were also older than respondents in the inpatient groups, as is shown in table 1. Furthermore a difference was found with respect to cultural background. The group outside of treatment contained more users with a cultural background other than Dutch. These are often members of minority groups in The Netherlands such as Maroccan and Turkish people. They have a Dutch nationality and were raised and sometimes born in The Netherlands. The result could be interpreted in two ways. First it might be a result of bias in the sampling method. Though this can not be ruled out totally, it is not the most acceptable interpretation, because all possible attention has been paid to the selection of the sample outside of treatment. If the community population truly has a higher percentage of respondents with a cultural background other than Dutch, this may be an important cue in identifying factors that obstruct seeking professional help. Finally a tendency of fewer women was found in the methadone group.

Table 1: Demographic features

	OUTSIDE OF TREATMENT N=81	METHADONE N=90	DETOX N=58	TC N=81	SIGN
average age	33.6^{DT}	32.0^{DT}	29.0	28.4	***
under 25	6.2^{DT}	13.3	27.6	27.2	***
between 25 and 35	49.4	47.8	53.4	55.6	-
older than 35	44.4	38.9	19.0	17.3	-
Women	28.4	10.0	24.1	19.8	*
Married	7.4	7.8	15.5	11.1	*
Foreign nationality	8.6	2.2	6.9	8.6	-
Cultural background other than Dutch	44.4^{MD}	23.3	17.2	27.2	**

* = $p \leq 0.05$ ** = $p \leq 0.0125$ *** = $p \leq 0.000$ ^{M} means significant different from methadone group, ^{M} means significant different from methadone group ^{D} means significant different from detox group, ^{T} means significant different from therapeutic community.

Employment.
The groups did not differ on long term items related to occupational functioning, as for instance level of education. The main line on this area is less respondents of the group outside of treatment having salaries, more users with unemployment benefit and more living from unconventional income (practicing ways of getting an income from stealing, begging, dealing or prostitution). It appears that the group outside of treatment is experiencing more problems on this area.

Heroin use in general.
Though the average age of first heroin use does not appear to differ, the average length of heroin use in years is negatively related to the intensity of the treatment programmes (statistically significant differences for outside of treatment versus detox and TC, see table 3). Notwithstanding the therapeutic community is supposed to treat the 'heaviest cases' among the users, users outside of treatment have even a longer heroin career, which is probably related to the higher average age in this group. This might point at a group of users outside of treatment, which has become 'treatment-tired' after several unsuccessful treatment experiences. The differences on the average number of days heroin use, is a result of the inclusion criteria. A large percentage of the users in the inpatient group had methadone on prescription when they entered the current programme and were interviewed. Therefore the mean number of days with heroin use is as well lower in these groups. An important finding is that the addicts outside of treatment differ significantly from the other groups in the number of clean periods. They report significantly less. This may be related to respondents in the same group 'experiencing less problems with their drug use' compared with the other three groups.

Table 2: Employment

		OUTSIDE OF TREATMENT N=81	METHADONE N=90	DETOX N=58	TC N=81	SIGN
Most important source of income	**income**	2.5[DT]	12.5	19.3	7.4	***
	social benefit	49.4	60.0	43.9	49.4	-
	unconventional	39.5[MDT]	10.0	10.5	19.8	***
Employment pattern past half year[1]:						
Unemployed		82.7[DT]	76.7[D]	55.2	61.7	***
Dealing		23.5	8.9	6.9	12.3	**
Prostitution		12.3	3.3	10.3	3.7	*
Employment in the past month		17.3	13.3	15.5	8.6	-
Problems experienced[2]		50.6	35.6	32.8	33.3	-

* = $p \leq 0.05$ ** = $p \leq 0.0125$ *** = $p \leq 0.000$, [1] at least one week, [2] one or more days of the past month. [M] means significant different from methadone group, [D] means significant different from detox group, [T] means significant different from therapeutic community.

Table 3: Heroin use in general

	OUTSIDE OF TREATMENT N=81	METHADONE N=90	DETOX N=58	TC N=81	SIGN
Average duration of heroin use[1] in years	9.8[DT]	8.0	6.8	7.6	**
Average number of days heroin use[2]	27.0[DT]	27.3[DT]	19.2	18.7	***
Recent[3] Polydrug[4] use (%)	96.3[T]	95.6	89.5	82.7	**
Clean in the past[3] years[5] (%)	48.1[MDT]	69.7	72.4	76.5	***
Problems experienced[2] (%)	67.9[MDT]	96.7	96.6	90.1	***
average number of days	24.7(N=55)	27.9(N=87)	27.1(N=56)	28.1(N=73)	*

* = $P \leq 0.05$ ** = $P \leq 0.0125$ *** = $P \leq 0.000$, [1] without periods of abstinence, [2] of the month preceding the interview, [3] one or more days of the month preceding the interview, [4] more substances on the same day, [5] at least one period. [M] means significant different from methadone group [D] means significant different from detox group, [T] means significant different from therapeutic community.

Use of other drugs.

The most important differences between the groups concerning other drug use were found in methadone use, amphetamine use and cannabis use (see table 4). The difference of more respondents in the impatient groups using methadone in the past month is resulting of more respondents coming right away from a methadone programme to the detox or TC.

Interesting is that respondents in the group outside of treatment have used less methadone on a life-time basis, compared with the inpatient groups. Concerning the use of other drugs, the group outside of treatment started on average at a later age with cocaine and amphetamine use. This could originate from the higher average age of the group outside of treatment and the years in which certain drugs became popular. However, the group outside of treatment stuck more to amphetamine use than the TC group, which is illustrated by a higher percentage of respondents outside of treatment using amphetamine in the past month. A difference in excessive cannabis use was found; the outside of treatment group used more years on average compared to the inpatient groups. These results are in harmony with the higher percentage of polydrug use in the group outside of treatment.

Table 4: Use of other drugs

	OUTSIDE OF TREATMENT N=81	METHADONE N=90	DETOX N=58	TC N=81	SIGN
Ever used methadone[2] regularly[1]	59.3[MDT]	81.1	87.9	86.4	***
average age of first use[3]	25.7(n=48)	24.1(n=73)	23.9(n=51)	22.7(70)	*
average length of use[3 4]	2.3	3.8	3.3	3.8	-
Methadone[2] in the past month	14.6[MDT]	45.2[D]	78.4	58.3	***
Ever used cocaine regularly[1]	86.4	84.4	91.4	96.3	-
average age of first use	24.0(n=70)[T]	23.6(n=76)[T]	21.8(n=53)	20.8(n=78)	**
average duration of use	6.6	4.5	4.9	5.2	*
Cocaine in the past month	71.6	72.2	67.2	59.3	-
Ever used amphetamines regularly	32.1	27.8	32.8	38.3	-
average age of first use	21.5(n=26)[D]	18.1(n=25)	16.9(n=19)	18.5(n=31)	**
average length of use	5.6[T]	2.9	1.3	1.8	**
Amphetamines in the past month	34.6[T]	0	0	3.2	***
Ever used cannabis regularly	70.4	78.9	77.6	88.9	*
average age of first use	16.5(n=57)	16.7(n=71)	16.2(n=45)	15.2(n=72)	-
average length of use	11.7[DT]	9.8	7.9	7.9	**
Cannabis in the past month	68.4	64.8	55.6	51.4	-

* = $P \leq 0.05$ ** = $P \leq 0.0125$ *** = $P \leq 0.000$, [1] 3 times a week or more, [2] bought 'at the street' or received in a programme, [3] computed for the respondents that used the substance, [4] without periods of abstinence. [M] means significant different from methadone group, [D] means significant different from detox group, [T] means significant different from therapeutic community.

Legal functioning.

In general similar percentages were found for the groups on most items related to criminal activities and being in prison. However two differences appeared. First more respondents of the group outside of treatment committed illegal activities in the past month (69.1%) compared to respondents in the methadone (47.8%) or detox group (44.8%). Second a higher average

number of getting in contact with the police for possession or dealing of drugs was found in the group outside of treatment (6.9) compared to the methadone group (2.4). This might too be related to the higher percentage of users outside of treatment, that has been dealing drugs in the past month (see table 2).

Social relations.

In general the group outside of treatment was more satisfied with their social situation (see table 5). This could be recognized in more satisfaction with living conditions in the group outside of treatment (compared with detox and TC), although no differences were reported between the groups in living condition itself. The methadone group reported more satisfaction at this item compared with the TC group as well. The group outside of treatment mentioned more satisfaction with spare time activities over the past half year before entering treatment than the inpatient groups. Additionally problems with closer and more distant social relations were inquired. The inpatient groups described more recent problems with family compared to the methadone group and the group outside of treatment had more disagreements with 'important others'.

Table 5: Social relations

	OUTSIDE OF TREATMENT N=81	METHADONE N=90	DETOX N=58	TC N=81	SIGN
Satisfied with living situation	59.3^{DT}	53.3^{T}	32.8	25.9	***
Satisfied with spare time activities	35.4^{DT}	23.3	12.1	8.6	***
Recent problems with[1]:					
parents/brothers/sisters	28.4	12.2^{DT}	46.6	46.9	***
partner/spouse	23.5	15.6	31.0	27.2	-
friends	22.2	11.1	12.1	14.8	-
important others	17.3^{M}	1.1	5.2	8.6	**

* = $P \leq 0.05$ ** = $P \leq 0.0125$ *** $P \leq 0.000$, ^{M} means significant different from methadone group, ^{D} means significant different from detox group, ^{T} means significant different from therapeutic community.

Psychological and emotional functioning.

The number of respondents that was ever treated for psychological complaints in a non drug treatment programme, did not differ over the four groups (see table 6). Overall is found that respondents in the detox and TC report far more psychological complaints (depression, extreme fear, concentration problems) from a life-time as well as a recent perspective. This conclusion is reflected in the number of days that psychological problems were experienced in the past month, which was higher for the inpatient groups compared to the group outside of treatment and the methadone group.

Table 6: Psychological and emotional functioning

	OUTSIDE OF TREATMENT N=81	METHADONE N=90	DETOX N=58	TC N=81	SIGN
Ever treated for psychological complaints	24.7	27.8	27.6	25.9	-
Trauma's[1]	50.6	34.8[T]	56.9	66.7	***
depression[2 3] (life-time)	54.3	50.0[T]	70.7	70.4	**
tension/fear[2 3] (life-time)	42.0[DT]	36.7[DT]	70.7	71.6	***
problems with concentration[2 3] (life-time)	27.2[DT]	32.2[T]	69.0	61.7	***
depression[2 3] (recent[4])	23.5[D]	21.1[DT]	53.4	40.7	***
tension/fear[2 3] (recent)	17.3[DT]	16.7[DT]	53.4	49.4	***
problems with concentration[2 3] (recent)	16.0[DT]	12.2[DT]	50.0	50.6	***
uncontrolled aggression (recent)	24.7	10.0[T]	19.0	30.9	**
experienced problems[5]	44.4[DT]	30.7[DT]	71.9	79.0	***

* = $P \leq 0.05$ ** = $P \leq 0.0125$ *** = $P \leq 0.000$, [1] in the ASI[6] defined as: events of which still psychological stress is experienced, [2] at least 14 days, [3] not a direct result of drug use or withdrawal symptoms, [4] in the month preceding the interview, [5] one or more days in the month preceding the interview. [M] means significant different from methadone group, [D] means significant different from detox group, [T] means significant different from therapeutic community.

Profiles.

The main results are summarized into profiles of the four conditions. When these profiles are compared, a division appears between on the one hand the outside of treatment and the methadone group which have similar characteristics and on the other hand the inpatient settings, between which no single statistically significant difference was found. Although the methadone setting is considered as a treatment setting in this study, it has clearly a different nature than the other treatment settings. The methadone programme has a very low-threshold character, the major part of the users is not participating in a reduction programme. Furthermore it appears that users in both inpatient programmes do not differ to a large extent, although differences in duration and intensity between the detox programme and the TC programme are large.

Profile of heroin users OUTSIDE OF TREATMENT

* In general a higher average age and specifically less respondents younger than 25 years
* more users with a cultural background other than Dutch
* less users with salaries, more unemployed users and more users with unconventional income
* a longer average length of heroin use and more recent polydrug use
* less respondents experience their drug use as problematic; less clean periods in the past three years
* less methadone use, longer history of cannabis use
* more illegal activities in the past month and more contact with police for possession of drugs or dealing of drugs
* more satisfaction with the current living situation and spare time activities
* more recent problems with 'important others'
* less psychiatric complaints such as life-time and recent tension/fear, life-time and recent problems with concentration and less recent depression, compared with the inpatient groups

Profile of heroin users in the METHADONE condition

* more respondents are satisfied with the current living situation
* less recent problems with close relatives and important others compared with the inpatient settings
* less psychiatric complaints in terms of less trauma's, less life-time and recent tension/fear, less life-time and recent concentration problems, less recent depression, less uncontrolled aggression.
* less problems in the past month as a result of psychiatric complaints

Profile of heroin users in the DETOX condition

* respondents are younger on average
* less users with a cultural background other than Dutch
* less users with unconventional incomes, less unemployment
* more users experience problems resulting from their drug use
* more recent problems with close family compared with the methadone group
* more psychiatric complaints, as recent and life-time tension/fear, life-time concentration problems and recent problems with depression
* more respondents experience psychiatric complaints in the past month

Profile of heroin users in the THERAPEUTIC COMMUNITY

* intramural respondents are younger
* less users with a cultural background other than Dutch
* more users experience problems as a result of their drug use
* more respondents were clean in the past three months
* more respondents experienced problems resulting of drug use in the past month
* less users are satisfied with their living situation and spare time activities
* more recent problems with close relatives than in the methadone group
*more psychiatric complaints as trauma's, life-time and recent tension/fear, life-time and recent concentration problems, problems with the control of aggression
*more psychiatric complaints in the past month

Discussion.

The present results indicate that differences between addicts in different treatment settings exist. It is found that the group outside of treatment is typified by an older average age. An important consideration by this finding is whether older heroin users really make less use of the treatment system or if the younger users are just harder to locate. From the fieldwork procedures, some insight might be gained in this matter. During the fieldwork all respondents were asked to give some socio-demographic features of the users they nominated for the snowball procedure (Eland-Goossensen et al. In press). Although only one third of the total pool of nominees has been interviewed, the percentage of users younger than 26 is the same for the sample outside of treatment as for the total pool out of which they were selected. This gives some further evidence that the interpretation of the younger users being harder to locate, is not valid. A second characteristic of the group outside of treatment is the larger percentage of users with a cultural background other than Dutch. Many of these are members of minority groups in the Netherlands such as Maroccan and Turkish groups. Possibly they do not enter treatment as easily as their fellows with a Dutch cultural background. This result seemed again not caused by the sampling strategy (checks were performed with the nominee pool).

The last characteristic of addicts outside of treatment was them reporting less stable jobs, more unemployment and more unconventional activities to earn money. No acceptable explanations were found at first sight. Remarkable is that this finding is the totally opposite of the results of Schottenfeld et al. who described that almost all individuals seeking treatment for opiate dependence or non opiate-dependent polydrug abuse report employment difficulties as a major reason for seeking treatment (Schottenfeld et al. 1992). In the current study occupational problems were no reason to seek help. They seem to become important in a later stadium of recovery, when more 'urgent' problems have been solved (partly).

The methadone group is recognized at experiencing mainly problems with drugs and not on other life areas, which could not be interpret yet. Possibly there are problems, which are denied, or masked. Though it was considered that the suppressing influence of heroin use on feelings of the respondents could be a reason for under-reporting of emotional problems, this being under influence of heroin or methadone counts as well for respondents in the other groups. All the respondents were interviewed before they actually entered the treatment programme.

A remarkable conclusion is that addicts in the detox condition and in the TC condition do not differ to a large extent. No significant differences were found between the groups, both groups have a larger amount of young addicts and more social and psychological problems. Although the length of the two types of treatment as well as the therapeutic intensity differ to a large extent, the addicts applying for these settings appear to be comparable.

No differences were found regarding criminality. Financial problems or being tired from the hustling seem plausible reasons for asking methadone or a more intensive type of treatment. However, the results indicate that the group outside of treatment was most involved in criminal activities in the past month, which indicates that these problems are no trigger for help-seeking.

When these results are related to the issue of matching individual and treatment setting three comments can be made. First was found that heroin addicts with psychological and

social problems applied more for inpatient settings. This suggests that these problems are a trigger for asking inpatient professional help. Before conclusions regarding matching can be made, evaluation studies have to show if these addicts are also successful in these programmes. A study of McLellan et al. (1980) showed that the severity of psychiatric problems can be considered a predictor for treatment success, indicating that severe psychopathology inhibits treatment success. From this perspective our results are in harmony with McLellan's finding that psychiatric problems play a central role in matching practices, although we find that social problems are important as well. Further research on this topic could be aimed at measuring psychopathology with more specific instruments and then relating the results of such a study to treatment outcomes.

Second the group of heroin users applying for methadone treatment was not very well characterized by a problem profile. As in the other conditions they mentioned drug problems, but no other life areas with problems. An interpretation of this result might be that the majority of drug users applying for drug treatment is not aimed at kicking the habit, but more at harm reduction activities and therefore is not relevant to the conclusions with respect to matching.

Third two groups were identified outside of treatment, who might need specific attention when studying matching possibilities. These were older heroin addicts and addicts with a cultural background other than Dutch. Possibly users outside of treatment, who were found to have a longer heroin career, tried several programmes without success and lost motivation for treatment. This will indicate less treatment success and asks for describing the treatment career of the addicts in different conditions. If the group truly became less motivated due to failing treatment experiences possibly a specific approach should be developed. The larger amount of heroin addicts with a cultural background other than Dutch in the group outside of treatment may be interpret as an important result regarding the accessibility of the treatment settings. Explanations can be sought on the one hand at the side of the user, in terms of cultural barriers to ask professional help, or on the other hand on the side of the programmes. Is there enough expertise on users with a cultural background other than Dutch?

Among the ASI[R] variables objective and subjective items can be recognized. Most questions consider objective information, some questions ask for satisfaction with for instance living situation or spare time activities. On these items a clear difference was found between the inpatient (less satisfaction) and other conditions (more satisfied), of which the latter are mainly not abstinence oriented heroin users. This points to further analyzing the influence of objective problems, their subjective experience, and the contribution of both to help-seeking behaviour. This interpretation was approved by Power (Power, Hartnol & Chalmers 1992), who described that not the objective items differed most for the help-seeking and non help-seeking group, but the subjective items as 'concern' and 'need for help'. As a continuation of this article a paper is made in which addicts outside of treatment versus addicts in treatment are compared at a more global level of the ASI[R] data (the severity rating) and in which the process of help-seeking is worked out as well, by studying differences in concern about problems and need for help.

An important consideration about the current conclusions is their generalizability. Are the current samples similar to addicts in those settings in other cities and countries? The most uncertain factor in this respect is the quality of the sample outside of treatment. Possibly some hidden high class heroin addicts were missed. However, the current state of the art of

the non random sampling strategies provided no better tools for sampling. The samples in the three treatment settings could be drawn from existing registrations.

An important implication of this study is that research performed on treatment seeking heroin addicts may not be generalized to the total population of heroin addicts, because of the differences in characteristics between subgroups of addicts in and outside of treatment.

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CHAPTER 3.2

Heroin addicts outside of treatment and in treatment compared at severity of problems and need for help.

Introduction

In the past decades addiction research was mainly focussed at populations of addicts in treatment settings. These studies were often performed from a descriptive-clinical view (Reuband 1992, Kooyman 1992) or an evaluative view, as for instance the Swedate project (Berglund e.a. 1991). By definition the populations in these studies consist of users who are experiencing problems in relation to their drug use. Research outside of treatment settings has usually an ethnographic character. For instance different aspects of the drug using life were described by Waldorf (1973), Agar (1973) and Sutter (1966). Preble & Casey (1969) studied economic careers of lower class heroin addicts. More recent ethnographic studies were concentrated on drug using rituals (Grund 1992) or the spread of H.I.V. among addicts (Ingold 1992). However, to date little research among addicts outside of treatment has been performed applying standardized instruments. Comparing addicts outside of treatment with addicts in treatment settings in a systematic way is of main importance with respect to the generalizability of the results of studies in or outside of treatment to the total population of addicts. Previous studies in which heroin addicts outside of treatment were compared to heroin addicts in treatment are summarized in table 1. From the overview of research literature can be concluded that disconcordant results were found.

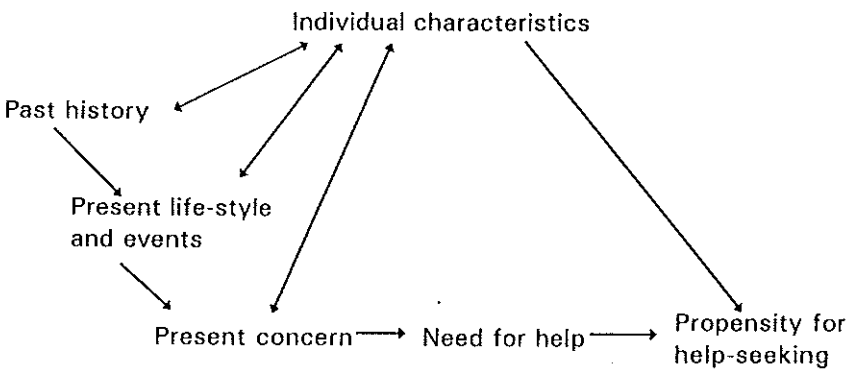
Table 1. Literature review on differences between addicts in treatment and outside of treatment (community).

Author	Sample	Sampling method	Research Instruments/variables	Results	Limitations	Implications
O'Donnel et al. (1976)	Community N=128 (many experimenting with heroin use, but not addicted) Sex: all men. Age: all between 20-30. Race: 67% white. Age of first heroin use: 17% under 18, 69% between 18-22, 13% over 22. Treatment N=20. Sex: all men. Age: all between 20-30. Race: 70% white. Age of first heroin use: 25% under 18, 65% between 18-22, 10% over 22.	National sample (multi-stage stratified random).	Interview with questions on past and current drug use, education, occupation, criminal behaviour, marital history and parents.	Treated addicts were more likely to have problems associated with heroin use (health, work, family) than non treated addicts. No racial differences or differences in social class origin were found.	Sample restricted to young men, drug use was more prevalent and extensive among the youngest of them. The low incidence of treatment may be a result of the respondents have been using drugs a relatively short time.	Untreated heroin users seemed better able to prevent negative effects as a results of their heroin use. They report less impairment associated with heroin use in areas as employment and family life. This might be a result of them being less likely to engage in goal-directed use of heroin (eg forget troubles).
Blumberg & Dronfield (1976)	Community N=115 (as described by acquaintances, no personal data) Sex: 12% females. Started injecting: 46.6 months ago on average. Median age: 22.9. Unemployed 38%. Court convictions 43%. Treatment N=115. Sex: 20% females. Started injecting: 35 months ago. Median age: 22.7. Unemployed 34%. Court convictions 58%.	Users in a clinic were asked to describe acquaintances inside and outside of drug treatment, of which the data were compared.	Own inventory about sex, age, drug use, employment, court convictions, physical complaints.	The main finding is that the acquaintances not at clinic are very similar to those at clinic. More employment in non clinic sample. The main reason why non-clinic subjects did not go to treatment was that they did not use opiates often enough.	Results can not be generalized broadly because of used nomination technique.	
Graeven & Graeven (1983)	Community N= 22. Age: on average 22. Groups were too small to compute differences in sex and ethnic differences. Marital status was comparable. Treatment N= 44 (detox, residential methadone and other). Mean age 24. Also experimenting users were included.	Respondents were part of an adolescent heroin outbreak around two high schools. Heroin users of different peer groups were selected by local informants.	Family background, personality, drug use, treatment experience.	No statistical tests were performed! Untreated addicts had better family lives, were less involved in the criminal justice system, had higher self-esteem and smaller habits.	Interpretation of the results should be cautiously because of the small sample sizes. The described differences between treated and untreated addicts suggest that generalizations of studies among only treated addicts can not be made.	The results show that there is a group of heroin users capable of regulating their habit in such a way that they don't need to be involved in any treatment programme.

Author	Sample	Sampling method	Research instruments/variables	Results	Limitations	Implications
Rounsavi lle et al. (1985)	Community N=105 Mean age: 27.6. Married: 35%. Sex: 85% males. Race: 75% nonwhite. Treated opiate addicts (used at least three times a week or more) N=204. Mean age: 27.7. Married 28%. Sex: 75% male. Race: 59% nonwhite.	Respondents were met by snowball sampling (new respondents met with the help of already interviewed drug users).	ASI (drug use history, legal history), SAS (social functioning), MMPI (personality), BDI (depression), RDC (psychiatric disorders).	Similarities were found for opiate use, overall indexes of legal problems and illegal activity, occupational functioning. An important difference was found for psychological problems; treatment sample had more current major depression. Treatment sample had more legal difficulties related to drug use and poor social functioning.	An important limitation of the study is the representativeness of the untreated addict sample. The chain referral method has weaknesses, However, but so have other methods such as a survey when used in a study to illegal activities. Possibly a group of addicts who keep themselves separate from the heroin-using community (addicted physicians/pharmacist s) is missed.	From the current sample the community addicts may be seen to have a greater chance at spontaneous remission. This would plea for not interfering in their natural course of addiction by trying to get them in treatment. However, the social costs of their illegal activities to achieve money and their being at risk for health problems suggests that it is important to help these people to seek treatment earlier or make treatment more appealing to them.
Herrero & Baca (1990)	Community N=50 heroin addicts in a general hospital. Age: 24% is between 15-20. 52% between 21-25, 18% between 26-30 and 6% over 30. Sex: 84% males. Married/live together 24%. Unemployed: 34%. Treatment N=75 in an addiction programme. Age: 15% between 15-20, 48% between 21-25, 33% between 26-30 and 4% over 30. Sex: 79% males. Married/live together: 23%. Unemployed 52%.	Interviews with addicts staying in a general hospital for somatic problems (possibly selection).	Basic standard protocol.	More brothers and sisters in non-treatment group, as well as more stable jobs, earlier started with drug use (cannabis & amphetamines), longer history of use. More personality disorders in non-treatment group. Treatment group had more treatment experiences.	Not discussed in the article.	Further studies on these findings will show if the conclusions are consistent. If so, this indicates that general hospitals provide a good opportunity to study addicts not in drug treatment. And than determinant variables in treatment seeking could be identified, which would help to properly shape preventive and therapeutic programmes.

In 1992 in the Hague, the Netherlands, a study was started on differences and similarities between addicts outside of treatment and addicts in different treatment conditions. In this study profiles of heroin addicts in three types of treatment and outside of treatment were described at item level of the Addiction Severity Index in an earlier publication (Eland-Goossensen et al. In press). In the current article addicts in and outside of treatment are compared at an overall level concentrating on severity of problems, concern and need for help. The central questions to be answered in this article are: (1) To what respects do heroin addicts outside of treatment differ on these matters from addicts in an outpatient methadone treatment programme. (2) To what respects do heroin addicts outside of treatment differ on these matters from addicts in an inpatient treatment setting. In addition to the mere description of discriminating characteristics, data of addicts in and outside of treatment is analyzed with respect to the process of help-seeking by heroin addicts. Central parameters in studying help-seeking behaviour in general are social network influences, socio-demographic characteristics of influence on treatment consumption propensity, client satisfaction, enabling characteristics such as availability and accessibility, and need characteristics such as severity of problems (McKinley 1980, Andersen 1968, Aday & Andersen 1974). Power et al. (1992) describe that for heroin users specifically not only the severity of problems influences the process of treatment seeking, but the problem recognition in terms of experiencing concern and need for help are related to the decision to ask for professional help as well. How these factors can influence actively help-seeking is illustrated in figure 1.

Figure 1.



Methods

Data-collection

All subjects were interviewed in The Hague, a medium sized city with about 440.000 inhabitants. Four strata have been formed: opiate addicts outside of treatment (community), in an outpatient methadone programme, in an inpatient detoxification center and in a therapeutic community (TC). These are the main treatment modalities for heroin addicts in The Netherlands. Earlier analyses showed that respondents in the detox group and the TC group did not differ significantly at any variable. Therefore it was decided to combine both groups into one 'inpatient' group.

All subjects were required to meet the following criteria: (1) opiate dependency according to the DSM-III-R criteria for at least the past two years, (2) 18 years old or more, (3a) in the treatment groups the respondents should have stayed at least two weeks in the specific setting and (3b) outside of treatment the respondent should not have had any treatment contacts lasting longer than two weeks during the past two years.

The group outside of treatment exists of 83 opiate addicts, who were paid for their participation. Because of a lacking sampling frame no random sample could be drawn. To compose a sample as representative as possible addicts were selected by snowball sampling with nominee selection (Hendriks et al. 1992, Eland-Goossensen et al. In press). The methadone group consists of 91 respondents, who were randomly selected from the entrants of the methadone programme. This is a low-threshold outpatient programme, in which the methadone is daily supplied from a bus that has several stations in the city. The inpatient group consisted of 149 addicts who applied for a 'detox only' (n=72) or detox followed by a therapeutic community programme (n=77). All addicts that passed the research criteria were asked to participate.

The non-response numbers in the different settings were: outside of treatment: 26 users could not be located or refused to participate and 11 users did not show up after the first appointment. Methadone: 32 users refused or did not show up. Inpatient: 1 person was mentally not able to be interviewed and 20 interviews could not be retrieved by the treatment setting. The socio-demographic characteristics of the lost respondents in the treatment settings, however, did not differ from those of the interviewed users.

Measurements

Outside of treatment the subjects were interviewed by a psychologist (first author) and a community fieldworker (expert by experience). In the treatment settings the interview was integrated in the intake procedure, which took place before the respondents actually entered treatment. The interviewing was done by trained staff of the settings. During the datacollection frequently meetings with all the interviewers were organized in which the interviews were commented and discussed by the researcher.

The instrument used is the revised Addiction Severity Index (ASI^R) (McLellan et al. 1980, Hendriks et al. 1989). The ASI^R provides information on six life areas. Both life-time and recent problems are addressed. First a global measure of the severity of the problems is computed for every life area, called 'severity rating'. This severity rating ranges from 0 (no problems/need for help) to 9 (extreme problems/need for help). In our analysis users with problems at a certain life area are operationalized as those with severity ratings of four or higher, since professional help is indicated for severity ratings of four and higher. Secondly the groups are compared for expressed concern and need for help at each life area. These items are scored on a five point scale from 0 (no concern or no need for help) to 4 (extreme concern or extreme need for help). These scores were cut off above value 2 (moderate).

Results

First a description of the most important background characteristics is given. Secondly comparisons are made at severity ratings, concern regarding the problems and need for help. Thirdly different paths are described in the process of help-seeking.
Background characteristics and some aspects of drug use career are presented in table 2. Further analyses between the groups (not in table) showed that the four groups did not appear to differ significantly on sex distribution, though slightly less females were present in the methadone group. Differences were found for average age, which appeared to be negatively related with treatment intensity (outside of treatment 33.6, methadone 32.0, inpatient 28.7). More specifically users under 25 were less present in the group outside of treatment (6.2%) and in the methadone group (13.3%) compared with the inpatient settings (27.5%). Furthermore the percentage of users with a non Dutch cultural background appeared to be significantly higher in the group outside of treatment (44.4% versus about 23%).

Severity ratings.
In figure 2 the percentage of respondents with severity ratings of four and higher are depicted per life area per group. Outside of treatment versus methadone: the groups appeared to have quite similar severity ratings at all life areas. No statistical differences were found. More respondents in the methadone group reported drug problems compared with the group outside of treatment, but the difference was not very large. Outside of treatment versus inpatient: at four life areas differences were found. Significantly more occupational problems and less drug problems were reported in the group outside of treatment. At the life areas of social and psychological functioning considerably more respondents of the inpatient groups reported problems.

Concern. In figure 3 the percentage of respondents who expressed concern on the different life areas are depicted per group. Significant (at the level of $p<0.05$ or less) differences between outside of treatment and methadone: more respondents of the methadone group mentioned concern regarding drug use. Remarkable is that this was the only life area with substantial concern expressed in the methadone group. The group outside of treatment experienced concern at various other life areas (family problems, occupational functioning, legal problems and health problems). Significant differences between outside of treatment and inpatient: more concern regarding health problems and occupational functioning were reported outside of treatment. The inpatient group mentioned more concern regarding drug problems as could be expected because they were applying for drug treatment, but also for alcohol problems. Although this percentage was relatively small.

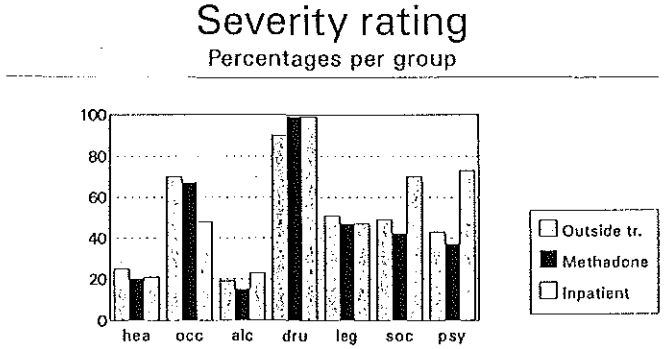
Need for help. Figure 4 shows the percentage of users with need for help at the different life areas per group. Significant differences between outside of treatment and methadone: again a large difference was found between both groups in need for help with drug problems (more in the methadone group). The group outside of treatment experienced more need for help with physical health, occupational functioning and legal functioning. Significant differences between outside of treatment and inpatient: many differences were found in need for help between these groups. In the inpatient group twice as many respondents experienced need for help with drugs compared with the group outside of treatment. Furthermore more need for help on problems with family, general social problems and psychological problems was reported. The group outside of treatment reported a larger extent of need for help regarding health problems and occupational problems.

Table 2. Background characteristics of the total group of respondents

Background characteristics	Mean/percentage	Standard deviation	n
mean age	30.9	6.7	
sex, men	80.0%		
ethnicity			
Dutch	71.3%		
non-Dutch	28.7%		
sources of income:			
paid job	9.7%		
unemployed	51.3%		
other	20.3		
marital status			
not married	75.5%		
married	10.0%		
divorced	13.2%		
drug use history[1,2]			
ever used:			
cocaine	89.4%		
amphetamines	32.6%		
prescribed drugs	44.5%		
cannabis	79.0%		
alcohol	52.9%		
mean duration of:			
heroin use	8.2	5.2	323
cocaine use	5.4	4.4	277
amphetamines use	3.0	4.6	100
prescribed drugs	4.5	4.5	137
cannabis use	9.4	6.5	245
alcohol use	6.0	6.0	162
more drugs on the same day	6.8	5.6	298
Mean number of episodes in:			
methadone programme	3.7	2.5	245
detoxification only (inpatient)	2.5	2.1	150
long-term clinical programme	1.6	1.0	78
dayprogramme	1.3	0.7	76
ever in prison	64.8%		
over 2 years in prison	17.4%		
ever treated for psychological problems	21.0%		
reporting 1 or more traumas	51.3%		

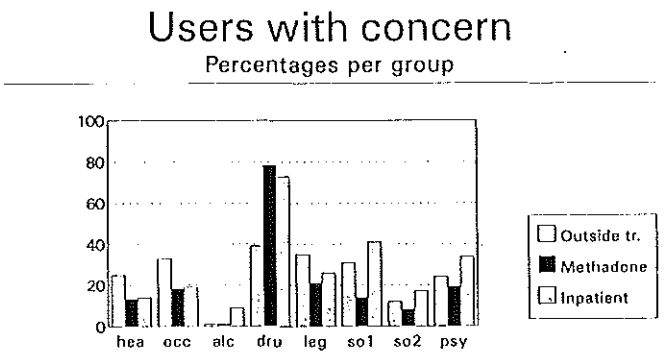
[1] Heroin had been used by all respondents
[2] These drugs had to be used three times a week or more.

Figure 2.



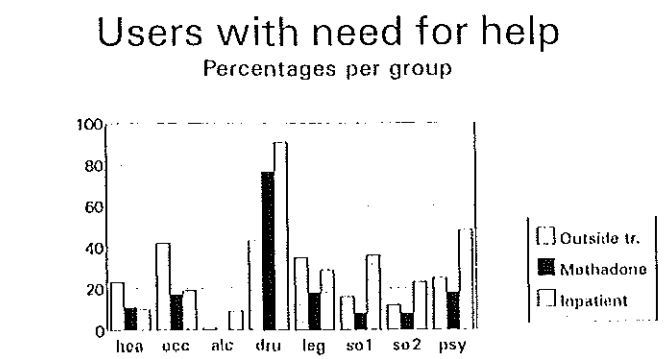
Outside tr.	25	70	19	90	51	49	43
Methadone	20	67	15	99	47	42	37
Inpatient	21	48	23	99	47	70	73

Figure 3.



Outside tr.	25	33	1	39	35	31	12	24
Methadone	13	18	1	78	21	14	8	19
Inpatient	14	19	9	73	26	41	17	34

Figure 4.



Outside tr.	23	42	1	43	35	16	12	25
Methadone	11	17	0	77	18	8	8	18
Inpatient	10	19	9	91	29	36	23	48

Discriminating variables.

In order to explore to what extent scores at the concern and need for help variables could discriminate between respondents in the treatment conditions, a discriminant function was computed. The responses to the concern and need for help variables were ordered according to their potential to discriminate between the groups (see tables 3 and 4). Negative signs of the coefficients indicate that small function values are associated with the presence of concern about that type of problems and larger values are associated with the absence of that type of concern.

Outside of treatment versus methadone: the percentage of cases correctly classified by the discriminant function is 78.2% (see table 3). Concern regarding drug use was found to be the main discriminating variable (more in the methadone group), followed by concern about family problems and about occupational functioning (more in the group outside of treatment). *Outside of treatment versus inpatient:* the percentage of cases correctly classified by the discriminant function is 76.3%. Again the main discriminating variable was concern about drug use. However, in this comparison concern about psychological problems was the second important discriminator. This finding is consistent with the larger percentage of inpatient addicts with a high severity rating for psychological problems.

The same discriminant procedure was performed for need for help variables (see table 4). *Outside of treatment versus methadone:* 79.3% of the cases was correctly classified. Besides need for help on drug use being again the most important discriminating variable, need for help regarding occupational functioning and legal functioning are main discriminating variables between the methadone and the group outside of treatment (both higher in the latter group). *Outside of treatment:* the percentage of cases correctly classified by the discriminant function is 83.6%. More respondents with need for help with psychological and social functioning in the inpatient group were again recognized in this discriminant analysis.

Table 3. Pearson correlation of concern variables with discriminant function.

Outside of treatment/methadone		Outside of treatment/inpatient	
indicators	correlation	indicators	correlation
drugs	-0.66	drugs	0.70
social/family	0.35	psychological	0.38
occupational	0.21	alcohol	0.29
health	0.19	social/family	0.21
legal	0.19	social/general	0.21
social/general	0.16	occupational	-0.20

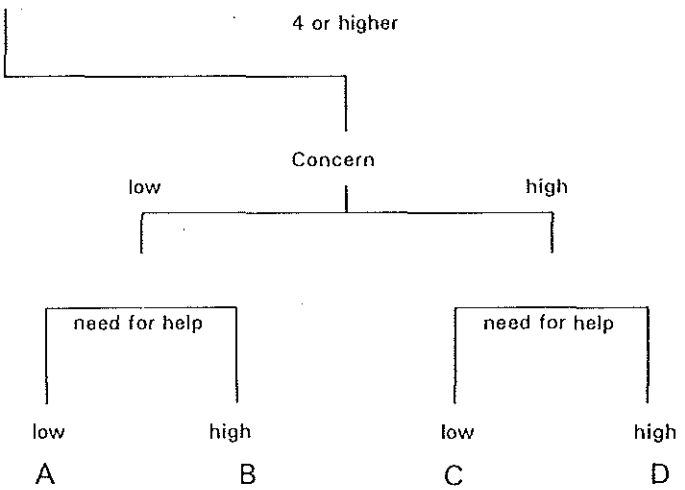
Different paths in the process of help-seeking.

A model presented in figure 5 describes four possible 'paths' that are identified for the users with a severity rating higher than four. The first path (A) describes users that develop neither concern about the problems nor need for help. This might indicate denial of the actual problems. The opposite path (D) concerns users that express both concern about their problems and need for help. Furthermore concern may be reported without need for help (C). These users are possibly developing towards asking professional help, but have not yet reached the final stage of expressing their need for help overtly. The last possibility (B) seems rather unexpected, because these users express need for help, but no concern. This might refer to a certain potential (for instance being able to work) that users ever would like to realize, although no problems are experienced at this life area at the moment.

Table 4. Pearson correlation of need for help variables with discriminant function.

Outside of treatment/methadone		Outside of treatment/inpatient	
Indicators	correlation	indicators	correlation
drugs	-0.66	drugs	0.75
occupational	0.44	psychological	0.34
legal	0.27	social/family	0.32
social/family	0.17	occupational	-0.26
health	0.16	social/general	0.22
social/general	0.13	alcohol	0.21

Figure 5



The three groups are compared on these four 'paths', of which the percentages have been computed for all the life areas (see table 5). In general most respondents do neither express concern nor need for help (A) or express both (D). The other two stages are far less represented (mainly under 10%). On the life area drug use, the majority of the respondents of both the treatment conditions (over 70%) expressed concern and need for help (D). For the group outside of treatment this was less than 30%. In this group most users (41%) had no concern and no need for help regarding drug problems (A). On the life areas occupational functioning, alcohol and social relations the majority of the users showed no concern and no need for help (path A). In the methadone group legal problems were less translated into need for help compared to the other groups. On the psychological area the group outside of treatment and methadone group were comparable, but in the inpatient group clearly a larger number of inpatient respondents experience psychological problems with, but also without concern or need for help.
With respect to the model of Power et al. (1992), that was discussed in the first section, this comparison indicates that the stage of expressing concern does not contribute to a large extent to the model. Few users express concern without need for help.

Table 5. Different categories in the process of help-seeking.

Life area	condition	A (%)	B (%)	C (%)	D (%)
drugs	outside of treatment	41.0	14.5	7.2	27.7
	methadone	17.6	4.4	5.5	71.4
	inpatient	6.1	21.1	2.0	71.4
legal	outside of treatment	16.9	6.0	6.0	21.7
	methadone	26.4	1.1	6.6	13.2
	inpatient	18.4	6.8	2.7	19.7
psychological	outside of treatment	18.1	7.2	2.4	15.7
	methadone	18.7	2.2	2.2	13.2
	inpatient	21.1	19.7	4.8	27.9

Discussion

The present results indicate that heroin addicts outside of treatment are different from treatment seeking addicts. The group outside of treatment was characterized by lower severity ratings for drug problems, but surprisingly the group did express more often concern and need for help with family problems, occupational functioning and physical health compared to the methadone group. The methadone group experienced least drug-related problems. Need for help on life areas other than drugs are clearly not a reason to ask for methadone prescription, although the original programme (Dole and Nyswander 1976) was aimed at reducing health, occupational, legal and social problems. The pure problems with drug use seem to be the main motivation for asking methadone on prescription. The inpatient group was characterized by higher severity ratings for social and psychological problems compared to the group outside of treatment and higher concern and need for help at these life areas. The main expectation was that general concern and need for help about problems would increase with increasing intensity of the programmes. From this point of view is the relatively little expressed concern on life areas other than drug use in the methadone group remarkable. A possible interpretation could be that the methadone group contains a subgroup older users, who have no faith in treatment anymore after several unsuccessful attempts and therefore do not actively try to solve their drug related problems. Another explication would be that this type of low-threshold methadone programme is not considered as a treatment modality by many heroin users, which would explain the little expressed concern and need for help.

The discriminant analyses showed that the most important reason for asking professional help is concern about drug problems. Furthermore it appeared that occupational problems, health problems and legal problems are no triggers for seeking help from a methadone programme or a residential programme. Psychological and social problems seem to motivate heroin users to ask for clinical treatment. This result was comparable with the study of Rounsaville and Kleber (1985) who found that help-seeking addicts were more depressive and had a poorer social functioning. When the results of the discriminant analyses were compared to the study of Power et al. (1992) the importance of self-reported concern and need for help for understanding differences in seeking professional help was confirmed. An important difference with Powers's study is the importance of concern and need for help regarding finances and need for support, which they found to be a main discriminator between the group in and outside of treatment. In the current data this topic was not so meaningful, which may be a result of the difference in instruments used. Remarkable is that legal problems were not mentioned as a discriminator between the groups. This contrasts

with the results of the Graeven and Graeven study (1983), who found that untreated addicts were less involved in the criminal justice system.
This study, however, has limitations both methodological and analytical. One of these is the unknown quality of the sample outside of treatment. The method used seems to provide a reasonable sample of the drug subculture (Eland-Goossensen et al. In press), but some subpopulations such as hidden high class addicts might be missed. However, the chance that these individuals would apply for treatment in the main modalities seems limited as well. Another limitation is that help-seeking is a dynamic and complex process. The items of the ASI^{R} that are presented in this publication give an indication of certain steps in this process, but are by no means complete. Further research could be aimed at the subjective experience of drug use and drug-related problems. This seems to be a key in understanding why some addicts seek help and others do not.

Implications of the study can be found in more understanding gained on the importance of different types of problems with respect to help-seeking. It appeared that some kind of problems (drug use, social, psychological) are more often a reason to seek professional help than others (occupational problems, health problems, legal problems). Three possible interpretations were found. It could result of the latter problems being masked, in the sense of that they remain hidden until other (psycho-social) problems are solved. Or maybe users experience the problems in these areas at the same time, but as less intensive and urgent compared to the psycho-social problems. A third option is that inpatient programmes do address psycho-social problems and therefore attract users with these problems. In that case attention could be paid to how to integrate these occupational, health and legal issues better in outreach programmes and treatment programmes.

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CHAPTER 3.3

Drug use career and treatment history of opiate addicts in and outside of treatment.

Introduction

Treatment seeking behaviour of opiate addicts is considered to have a dynamic character. Factors that influence this treatment seeking behaviour can be divided into short-term factors and long-term factors. The fact that application for treatment is often preceded by a crisis in physical health, psychological functioning or legal problems can be seen as an example of short-term factors (DeLeon & Jainchill 1986, Rounsaville & Kleber 1985). The influence of earlier treatment experiences on current help-seeking behaviour is an example of a long-term factor.

A review of the literature showed that heroin addicts differ in terms of problems, need for help and reasons to seek professional help (Rounsaville & Kleber 1985, McLellan et al. 1981, McLellan et al. 1983). Therefore a description of the type and severity of problems of addicts in different treatment settings may be a step in the direction of better a match between the heroin addict and a specific treatment setting. This might lead to improved treatment results (McLellan et al. 1980a, Segest et al. 1989, Del Boca & Mattson 1994). The central question to be answered here can be formulated as: Do opiate addicts who apply for three different types of drug treatment or who stay outside of treatment, differ in aspects of drug use career, treatment history and socio-demographic characteristics?

In order to describe properly the relation between background characteristics of the addict and application for a certain treatment type, the problems of addicts outside of treatment should be described as well. This enables barriers to be identified with respect to seeking help as well as shortcomings in the treatment provision.

Figure 1. Groups of variables related to treatment seeking behaviour of opiate addicts

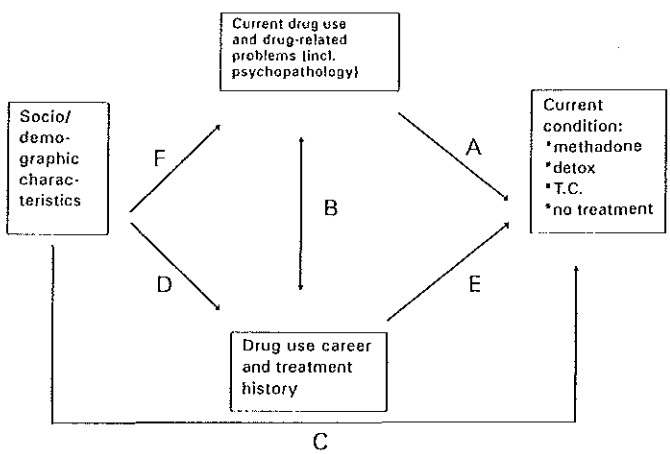

Figure 1 shows the different groups of variables related to treatment seeking behaviour (or staying outside of treatment) in this study. The observed dynamic character of help-seeking among opiate addicts is characterized by the relation between short-term variables and type of treatment (A). The long-term variables as for instance drug use career, treatment history and socio-demographic variables might directly (E,C) but also indirectly by influencing the

short-term variables (B) be related to help-seeking and therefore act as confounders upon relation (A). The central focus in this article is on relations C, D and E.

Methods

Data collection

The current research question is part of an extensive study on differences and similarities of opiate addicts in and outside of treatment. Data were collected for about 30 months. In all 310 opiate addicts were interviewed. Their ages ranged between 18 and 54 with a mean of 31. 80% of the respondents were men. They were interviewed in The Hague, a medium sized city in The Netherlands with about 440.000 inhabitants. All subjects had to meet the following criteria: (1) using opiates three times a week or more for at least the past two years, (2) 18 years or older, (3a) in treatment respondents should have stayed at least two weeks in the specific treatment setting before their interview was retrieved from the intake dossier and (3b) outside of treatment respondents should have had no treatment contacts over two weeks during the past two years.

The respondents were interviewed in four conditions (see box 1):
81 heroin addicts without treatment contacts have been interviewed all over the city of The Hague. They received a payment. Respondents were selected by applying the snowball sampling method with nominee selection. In this fieldwork method every respondent names up to six other heroin users out of which one is randomly selected (Hendriks et al. 1992). In this way the researcher moves across several networks of heroin users. 90 heroin addicts in consecutive admission were selected from a methadone programme. Every third applying heroin addict was asked to participate. 58 heroin addicts were interviewed in the clinical detoxification center, who did not continue their treatment at the therapeutic community (detox only). 81 heroin addicts continued their treatment after detoxification in the therapeutic community (TC) programme. All respondents were interviewed at the intake before the actual treatment started. If respondents left the setting before the requested 2 weeks, their interviews were not used. The non-response existed of 37 heroin users outside of treatment, 32 heroin users in the methadone group and 37 heroin users in the inpatient settings. The non-responders and respondents were compared on socio-demographic characteristics by research condition and no significant differences were found.

Box 1 Research groups

Outside of treatment. Respondents outside of treatment were acquired from as many different networks as possible. Access was gained through daycenters for the homeless, meetingplaces in different neighborhoods, dealing addresses and outreachworkers. Interviews were held at the homes of the respondents, in the restaurant of the railway station, in the room of an outreachworker and in a specially equipped bus. Several appointments had to be made in order to complete the set of three interviews and a referral.

Methadone programme. This is a low-threshold outpatient programme, aimed at harm-reduction. Methadone and medical care are supplied for free. Clients are not forced into detoxification, counselling or urine testing. Use of drugs is tolerated. Clean needles and condoms are available in the programme. The heroin addicts go to a bus that has several 'stations' in the city to receive the methadone daily or a few times a week.

Clinical detoxification programme. This is a residential programme aimed at detoxification, which is realized by reducing a dose of methadone every day. The highly structured schedule in this programme includes several hours of sport, housekeeping duties, as well as therapeutical meetings aimed at orientation to possible further treatment. The programme lasts about two weeks.

Drugfree therapeutic community. This is a hierarchically structured community in which the addicts themselves practice with different tasks and functions. Cleaning, preparing food, planning, taking care of the animals etc., are all duties of the inhabitants. The whole milieu is therapeutic and additional therapy sessions are held. This intensive programme lasts over one year and is followed by a period of re-entry in society.

Measurements and operationalizations

Three instruments were used, two of which are standardized, structured interviews. These are the Dutch version of the Addiction Severity Index (McLellan et al. 1980b, Hendriks et al. 1989) and the Composite International Diagnostic Interview (Robins et al 1989). A third qualitative interview was administered. The instruments are described more in detail in box 2. This article presents results based on information of the Addiction Severity Index (ASI^R).

Box 2 Research instruments

Addiction Severity Index^R. This structured instrument is used for intake, follow-up and research purposes. It provides an indication of the type and severity of problems with drug use, alcohol use, health, occupational and legal functioning, social relations and psychological functioning. Also the concern regarding the different types of problems and need for help at the different life areas are explored. Unique is the 'severity rating', which is chosen per problem area, in which the opinion of the interviewer is included.
Composite International Diagnostic Interview. This structured interview is aimed at assessing psychopathology by checking symptoms of different psychiatric disorders, which are combined in a decision-tree and end up in a classification of recent and life-time DSM-III-R and ICD-10 disorders.
Qualitative Interview. This in-depth interview is aimed at exploring how the user experiences the problems that were described in the structured interviews. Special attention is paid to reasons for seeking professional help on the one hand or motives to stay outside of treatment on the other hand.

Demographic characteristics. All of the demographic variables of the ASI^R section 'general information' are presented (sex, age, cultural background). Education and employment are not considered demographic characteristics.

Drug use career. The majority of respondents in this study appear to be polydrug users, therefore the study focusses on the drug use career in stead of just the heroin career. Several research papers have been published about the drug use career on a conceptual level (Rosenbaum 1981, Crawford 1983, Swierstra 1990, Vaillant 1966, Winick 1962, Prins 1995). An article of Power et al. (1992) corresponds best with the current study because they also used the ASI as a basis for their operationalization of drug use career. These authors operationalize the concept of drug use career with items on drug use and drug-related arrests as formulated in the ASI^R. Heroin career and history of delinquency are often described together. However, since they are two quite different aspects of the career, a description of delinquency is not included in the current study. Four main items of the section drug and alcohol use of the ASI^R are used to describe the drug use career. These are: age of first use of several types of drugs, length of drug use, number of drugs used on a life-time basis and periods of abstinence in the past three years.

Treatment history. In some studies with this concept only a general distinction between treatment or no treatment is used, regardless of the type of treatment in which the addicts were involved (Hasin 1994). Other studies use information about type of earlier treatments, number of treatment episodes and length of treatment episodes (Leigh et al. 1984). In one study, unsuccessful attempts to receive professional help are integrated in the concept (Oppenheimer et al. 1988) and in another reasons to break off a programme were included (Sheehan et al. 1986). In the current study the concept of treatment history is operationalized by the following items: number of treatment episodes, number of treatment types and participation in different types of treatment.

Analyses

A chi-square test has been used for examining differences in dichotomous variables and analysis of variance for differences in means. First the data was analyzed per variable over the four groups for an overall statistical difference. If this was found pairs of groups between which the difference occurred, were identified. Such a difference is indicated in the tables by

an abbreviation of the first letter of the research condition with which the difference exists. The abbreviations are ^{M}(methadone group), ^{D}(detox group) and ^{T}(therapeutic community group). For instance in the first table 44.4^{MD} means that this percentage is significantly higher in the group outside of treatment than in the methadone and detox groups. Following the Bonferroni method of multiple comparison of several groups, a p-value of 0.0125 is taken as an upper limit (Altman 1991). This method corrects in a conservative way. Which means that it is more likely that real (not based upon chance) differences are described as not significant, than that differences based upon chance are presented as real (significant). Finally anova-tests were performed to control for the demographic characteristics, by adding the latter as covariates.

Results

Demographic characteristics

Table 1 presents differences in demographic characteristics between the four groups. The most important findings are that the group outside of treatment appeared to consist of more respondents with a cultural background other than Dutch compared to the methadone group and detox group. Furthermore the groups differed on age. The group outside of treatment had significantly less users under 25 compared to the detox group and the TC group.

Table 1. Demographic characteristics per treatment condition

	Outside of treatment	Methadone	Detox	TC	sign
Percentage	n=81	n=90	n=58	n=81	
Women	28.4	10.0	24.1	19.8	-
Married	7.4	7.8	15.5	11.1	-
Foreign nationality	8.6	2.2	6.9	8.6	-
Non-Dutch background	44.4^{MD}	23.3	17.2	27.2	*
Younger than 25	6.2^{DT}	13.3	27.6	27.2	**
25 to 35 years	49.4	47.8	53.4	55.6	-
Older than 35 years	44.4	38.9	19.0	17.3	-

* = $P \leq 0.0125$ ** = $P \leq 0.000$. ^{M} means significant different from methadone group, ^{D} means significant different from detox group, ^{T} means significant different from TC group.

Drug use career

Table 2 represents the mean age of onset for several types of drugs. Not all these types of drugs were used by all respondents. Therefore the smaller sample sizes of those who actually used these drugs are given if necessary. Addicts in the group outside of treatment have a higher age of onset of heroin use compared to addicts in the TC (almost three years later on average). Also for cocaine use: both the users in the group outside of treatment and in the methadone group started at a later age compared to the users in the TC group. Respondents in the group outside of treatment were older when they started with amphetamines than respondents in the detox group. With respect to length of drug use, it is remarkable that while addicts in the group outside of treatment have a later onset of use of heroin and cocaine, their length of use is the highest on average: For heroin 9.8 years, this is significantly longer than the detox group (6.8) and the TC group (7.6). For cocaine 6.6 years which is significantly longer than the methadone group (4.6). For amphetamines 5.6 years which was about twice as long as in the other groups. This implies as already

described that the addicts outside of treatment are older on average. The groups did not differ significantly on the total number of drugs used at a lifetime basis. A larger percentage of respondents in the group outside of treatment had not been clean in the past three years.

Treatment history

Table 3 presents some general characteristics of the history of treatment participation, as for instance total number of treatment episodes. This appeared to be significantly lower in the group outside of treatment (3.6) compared to the TC group (6.4). A comparison on total number of inpatient and outpatient programmes in which the respondents participated showed a similar pattern. The group outside of treatment participated on average in significantly less types of treatment (1.6) compared to the TC group (2.2). Furthermore it appeared that more inpatient respondents participated ever in methadone programmes and long-term clinical programmes. However, this might be a result of the inclusion criteria stating that users in the group outside of treatment were not allowed to have any treatment experiences during the past two years.

Additionally the groups were compared on number of respondents without treatment experiences. This percentage appeared to be significantly lower in the TC group compared to the group outside of treatment.

Table 2. Drug career variables in relation to treatment condition

	Outside of treatment	Methadone	Detox	TC	sign
Mean age	n=81	n=90	n=58	n=81	
Heroin[1]	22.1[T]	21.0	21.0	19.4	*
Cocaine	24.0[T] (n=70)	23.6[T] (n=76)	21.8 (n=53)	20.8 (n=78)	*
Amphetamines	21.4[D] (n=26)	18.1 (n=25)	16.9 (n=19)	18.5 (n=31)	*
Prescribed drugs	25.7 (n=34)	23.1 (n=42)	21.5 (n=22)	21.1 (n=39)	-
Cannabis	16.5 (n=57)	16.7 (n=71)	16.2 (n=45)	15.2 (n=72)	-
Alcohol	21.6	20.4	17.5	19.3	-
Total number of drugs (mean)	3.7	3.8	4.0	4.4	**
0 times clean[2]	51.9[MDT]	30.3	27.6	23.5	-

* = $P \leq 0.0125$ ** = $P \leq 0.000$. 1. Methadone and hallucogenic drugs were left out the table. The former was almost only consumed in the methadone programme (see table 3), the latter was not consumed for a longer period, 2. Clean periods in the past three months. [M] means significant different from methadone group. [D] means significant difference from detox group. [T] means significant difference from TC group.

In order to control for the confounding effects of age and cultural background between the groups an anova-test with age and cultural background as covariates was performed (see table 4). As a result some significant differences found earlier were not statistically significant anymore. These were: age of onset of heroin use and length of heroin use. Some new significant differences between the groups occurred, after controlling for age and cultural background. These were: length of alcohol use, total number of drugs used and participation in a detox programme.

Table 3. History of treatment participation per treatment condition

Mean/percentage	Outside of treatment n=81	Methadone n=90	Detox n=58	TC n=81	sign
Number of treatment episodes (mean)	3.6[T]	4.8	5.1	6.4	**
Number of treatment types	1.6[T]	1.8	1.9	2.2	*
Ever methadone used[1] (percentages)	67.9[D T]	76.7	87.9	86.4	*
Ever[2] in detox	42.0	43.3	46.6	61.7	-
Ever in day programme	21.0	27.8	31.0	19.8	-
Ever in clinical long term programme	16.0[T]	21.1[T]	20.7[T]	42.0	**
Ever in other programme	12.3	13.3	6.9	11.1	-
Not treated at all	19.8[DT]	16.7	15.2	1.2	*

* = P ≤ 0.0125 ** = P ≤ 0.000, 1. On a regular basis, 2. One or more treatments in the specified programme. [M] means significant different from methadone group. [D] means significant difference from detox group. [T] means significant difference from TC group.

Table 4. Results of the anova procedures with age and cultural background

Variables	F	df	sign	% explained variance
Drug use career:				
Length of alcohol use	2.9	3	*	9%
Length of amphetamine use	3.3	3	*	7%
Total number of drugs used	3.4	3	*	11%
Clean in the past three years	6.0	3	**	7%
Treatment history:				
Number of treatment episodes	6.1	3	**	14%
Number of treatment types	3.8	3	*	8%
Ever involved in methadone programme	4.3	3	**	10%
Ever involved in detox programme	2.8	3	*	5%
Ever involved in a clinical long-term programme	6.0	3	**	6%
Not treated at all	8.4	3	**	9%

* = p ≤ 0.0125 ** = p ≤ 0.000

The drug use career of the respondents outside of treatment was characterized by an on average longer use of cocaine and amphetamines for the users of these types of drugs. Whereas respondents in the detox group which had been using alcohol, showed a longer use on average. Furthermore the least types of drugs were used at a life-time basis outside of treatment and in this group the largest percentage of users was found that had not been clean ever.

Differences in treatment history of opiate addicts in the four conditions were found on several aspects. The group outside of treatment reported least treatment episodes on average, in least types of treatment. The treatment history of the TC group was characterized by the highest number of treatment episodes in most types of treatment (methadone, detox and TC).

Conclusion & discussion

The aim of the study was to gain insight in whether opiate addicts, who apply for three types of treatment and opiate addicts outside of treatment differ in socio-demographic characteristics, aspects of drug use career and aspects of treatment history. By describing the demographic characteristics of the four groups it became clear that younger addicts (up to 25) more often seek long-term inpatient treatment, while the older heroin addicts (over 35) seek significantly less help. They were more often found outside of treatment and in the methadone programme. The first observation may be called positive in the sense that young users have found the way to treatment and by participating they learn what can be found there. They may benefit from it in an early stage of drug use career, in which they might have more hope for a drug-free future and have a stronger motivation to become clean than the users over 35. Another category of users more often screened in the no treatment setting consists of the non-Dutch members of minority groups. This is an important finding, it should be clarified what they experience as barriers with respect to seeking professional help. Is it that they have less problems, or do they have problems but that there are (cultural) impediments to seeking help? Adequate prevention and treatment strategies should be developed.

It appeared that no differences were found between the groups for sex, number of users with polydrug use which was high in all groups and the use of cannabis preceding the use of 'harder' drugs. In several aspects the differences between the group outside of treatment and the TC group were largest. With respect to drug use career it appeared that those applying for the TC treatment had been using more types of drugs compared to users in the group outside of treatment. The fact that a larger number of respondents in the group outside of treatment had been significantly less clean (own attempts, or after treatment) in the past three years may indicate that the decision to ask for professional help is often related to earlier attempts to kick the habit. On aspects of treatment career the group outside of treatment reported least treatment experiences although they have the highest average age. An important remark at this result is that the group outside of treatment had not been in treatment for the past two years (inclusion criteria). This might have affected the number of earlier treatment episodes reported. The TC group showed the most intensive (in the sense of most treatment episodes in most types of treatment) and varied treatment history.

The fact that respondents in the TC group are the youngest on average, have used most different drugs on average and have the most intensive treatment history indicates that this is a group with a strong need for help. That addicts outside of treatment ask less frequently for help during a length of drug use that is comparable with the other groups is a finding that needs to be specified. Further studies are needed to make sure this result is not influenced by the inclusion criteria and to outline the motives for the lower rate of help-seeking of addicts outside of treatment. Do addicts outside of treatment have better ways to minimize negative consequences of the drug use, as was suggested by Zinberg (1984)? Or could it be that the experience of the drug use is less problematic among addicts outside of treatment, as was studied by Rosenstock (1960, 1974). Biernacki (1986) suggested the role of the social network as being one of influence on the decision to ask for professional help

or not. This would mean in our study that the relatives of the older respondents in our group outside of treatment might have been less 'pushing' towards treatment compared to the relatives of the younger who more frequently choose a TC treatment. Oppenheimer and Sheehan (1988) stressed that expectations of treatment programmes and fears for treatment should be investigated further. We found that the majority of our group of addicts outside of treatment reported some earlier treatment experiences. Hopefully further analyses of our qualitative interview data from this group will shed more light on the impact of these earlier experiences.

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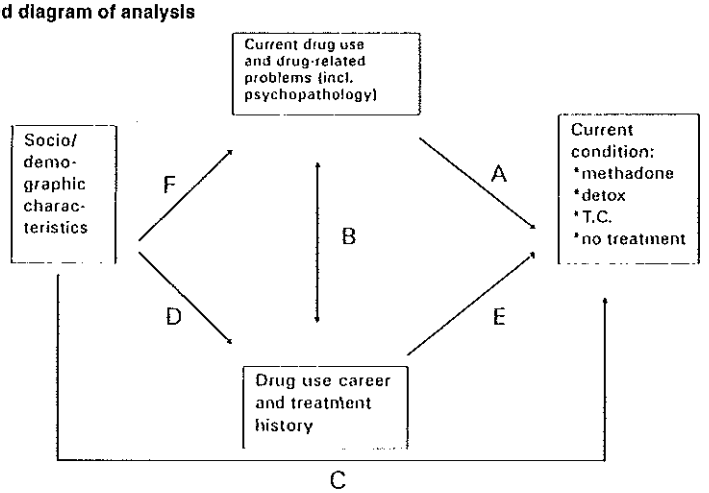
4. Comorbid psychopathology

Mental problems in this study have been measured not only with the ASI^R section on psychological functioning, but also with the CIDI (n=344). An important advantage of the CIDI interview is that DSM-III-R classifications can be computed on the basis of the data. Chapter 4.1 presents the prevalences of these DSM-III-R disorders for the total group and for opiate addicts in the methadone condition, the inpatient conditions and the outside-of-treatment condition. These analyses are carried out in conformity with the relations A and F in Figure A, in which psychopathology is a specific type of comorbid problem. Chapter 4.2 divides the total group of respondents into opiate addicts with no, moderate or severe psychopathology. These three groups are analysed on differences in drug use career (including treatment for addiction) and psychiatric history (relation B in Figure A). It is furthermore described how much earlier the onset of drug problems was reported in comparison to the onset of psychiatric problems. In the ASI^R analyses it was found that mental problems appear to be one of the main discriminators between opiate addicts outside of treatment and opiate addicts asking for inpatient treatment. In this study two instruments have been used that measure these mental problems (ASI^R and CIDI). In chapter 4.3 an analysis of agreement is made between the data collected with both instruments.

Figure A. Simplified diagram of analysis



The chapters of this section are based on the following papers and manuscripts:

* M.A. Eland-Goossensen, L.A.M. van de Goor, H.F.L. Garretsen & W.J. Schudel. Opiate addicts in and outside of treatment compared on psychopathology. European Addiction Research, in press.

* M.A. Eland-Goossensen, L.A.M. van de Goor, H.F.L. Garretsen & W.J. Schudel. Drug use career and psychiatric history of opiate addicts with no, moderate or severe psychiatric history. Submitted.

* M.A. Eland-Goosssensen, L.A.M. van de Goor, H.F.L. Garretsen & W.J. Schudel. Screening for psychopathology in the clinical practice. Accepted for publication in the Journal of Substance Abuse Treatment.

CHAPTER 4.1

Opiate addicts in and outside of treatment compared on psychopathology

Introduction

Over the last few years comorbid addiction and psychopathology have been an important theme in the scientific discussion on addiction (Miller & Stimmel 1993, Hendriks 1990). The importance of the problem is underlined by the observation that higher psychopathology prevalences were found among opiate addicts compared to the general population (Miller & Fine 1993). Another reason for the scientific interest in these so-called 'dual diagnosis' problems is that severe psychopathology in opiate addicts was found to be related to a larger amount of health, employment, social and drug use problems and to a worse prognosis for treatment. (McLellan et al. 1981, 1983, Rounsaville & Kleber 1985, Rounsaville et al. 1986, Kosten & Rounsaville 1986, Gerstly et al. 1990). Furthermore psychiatric addicts appear to challenge the limits of the treatment system (Lehman et al. 1990) by being rejected at mental health institutions on the one hand and by not functioning well in

Table 1. Overview of studies on psychopathology in opiate addicts.

Author(s)	Instruments	Sample	Results
Rounsaville BJ, Weissman MM, Kleber H, Wilber C. (1982)	Schedule for Affective Disorders and Schizophrenia-Lifetime (SADS-L) and the RDC criteria. (Endicot & Spitzer 1978)	533 subjects dependent on narcotics, taken from different treatment settings	86.9% of these treated opiate addicts reported at least one lifetime disorder. Lifetime disorders: major depression 53.9%, phobic disorder 9.6%, alcoholism 34.5%. The percentage of respondents with ASP[1] disorder was 26.5%
Hendriks VM (1990)	Diagnostic Interview Schedule (Robins et al. 1981)	152 predominantly polydrug users, sampled by consecutive admission to a clinical detoxification center	60.5% reported one or more lifetime disorders, excluding ASP and alcohol disorders. Lifetime disorders: major depression 36.8%, any anxiety disorder 41.4%, alcohol dependence 52.0%, ASP disorder 59.9%.
Regier DA, Farmer ME, Rae DS, Locke BZ, Keith SJ, Judd LL, Goodwin FK (1990)	Diagnostic Interview Schedule (Robins et al. 1981)	20291 subjects sampled in the US total community and institutional population. Subjects were 18 years or older.	Although the main part of the psychopathology prevalences were not described for opiate users separately, some percentages were. In 65.2% of the opiate addicts any mental disorder was assessed. ASP disorder was found in 36.7% and alcohol abuse/dependence in 65.9%.
Abbott PJ, Weller SB, Walker SR (1994)	The SCID-P was used (Spitzer et al. 1988)	144 opiate addicts were sampled in a methadone programme.	Of the sample reported 77.1% at least one disorder on lifetime basis. The most common lifetime Axis I disorders were major depression (25%) and dysthymia (15.3%). Any anxiety disorder 27.1%, alcohol dependence 57.6%. ASP disorder (Axis II) was found in 31.3% of the respondents.

[1] ASP disorder = Antisocial personality disorder

specialized drug treatment settings on the other hand. Although some new models for dual diagnosis treatment programmes were described in literature (Minkoff 1989, Kofoed et al. 1986) such treatment settings are not yet available on a large scale.
Prevalence rates of psychopathology among opiate addicts are not easily obtained (Raskin & Miller 1993). Population surveys have shown not to be the best option to collect this type of information among hidden populations such as opiate addicts (Goor van de et al. 1994), mainly because of the low prevalence of opiate addiction in the general population and the inability to reach homeless users. Also the illegal character of heroin use will most likely result in substantial and selective non-response and possibly in underreporting. Therefore it is not surprising that until now studies on psychopathology among opiate addicts were predominantly held among addicts in treatment settings. The overview in table 1 presents studies on psychopathology among opiate addicts.
Because the majority of addiction research with standardized instruments has been carried out in treatment settings, questions are raised about the possibility to generalize the results of studies on addicts in one type of treatment to addicts outside of treatment and to addicts in other treatment settings (O'Donnel et al. 1976, Blumberg & Dronfield 1976, Graeven & Graeven 1983, Rounsaville et al. 1987, Herrero & Baca 1990, Pottieger et al. 1995, Lewis et al. 1992). For example Van Limbeek et al. (1992) described the psychopathology of 203 heroin addicts in two different treatment settings (a clinical detoxification programme and a low threshold methadone programme). The Diagnostic Interview Schedule (Robins et al. 1981) was used to obtain DSM-III lifetime and recent (past year) diagnoses. It was found that 53% of the addicts sampled in the two treatment settings reported at least one lifetime DSM-III disorder. Big differences existed between the number of addicts with one or more disorders in a detoxification programme (67.8%) versus addicts in a methadone programme (40.0%). A larger number of respondents in the detox programme reported lifetime anxiety disorders and mood disorders.

Until now little information was available about differences in psychopathology between opiate addicts in and outside of treatment. Therefore the central aim in this article is to present prevalences for subgroups of opiate addicts in an outpatient methadone programme, inpatient programmes and addicts outside of treatment as well as for the total group. The results of the total group will be compared with a Dutch and an American prevalence study on psychopathology in the general population. The Dutch study included 315 subjects between 18 and 80 years with a Dutch, Surinam or Indonesian cultural background (Limbeek van & Berg van den 1994). They were interviewed with the DIS (Robins et al. 1981) resulting in DSM-III disorders. The American National Comorbidity Study described CIDI (Robins et al. 1989) prevalences among persons aged 15-54 years in the non institutionalized civilian population of the United States (Kessler et al. 1994). The number of respondents was 8098. The data was weighted for non-response adjustment, for demographic characteristics and for differences in probabilities of selection between and within households.

Methods

The research question is part of a larger study on differences and similarities between opiate addicts in and outside of treatment. All respondents had been dependent on opiates for the past 2 years, which is in accordance with DSM-III-R criteria. They were at least 18 years old. Addicts outside of treatment had not received treatment during the past two years. Respondents in treatment stayed at least two weeks in the treatment setting before their interview was used in the study. Respondents were sampled in the three most common treatment settings in The Netherlands: a methadone programme, a detoxification programme and a therapeutic community (TC). Unpublished data showed that respondents

in the detox group and the TC group did not differ significantly at any variable. Therefore it was decided to combine both groups into one 'inpatient' group.

The group outside of treatment existed of 83 opiate addicts. Because a sampling frame was lacking in this condition a random sample could not be drawn. To compose the most representative sample addicts were selected by snowball sampling with nominee selection (Hendriks et al. 1992). The fieldwork was carried out by the first author and a community fieldworker: someone who knows the drug using culture from inside and is trained in interviewing. The methadone group consisted of 91 respondents, who were selected by consecutive admission from the entrants of the methadone programme. This is a low-threshold outpatient programme, in which the methadone is daily supplied from a bus that has several stations in the city. The inpatient group consisted of 149 addicts who applied for a 'detox only' (n=72) or detox followed by a therapeutic community programme (n=77). In the inpatient settings all applying addicts that passed the research criteria were asked to participate.

The non-response numbers in the different settings were: Outside of treatment: 22% of the users identified by the chain referral method were not located or refused to participate and 9% of the approached users did not show up at the second or third appointment. Methadone: 26% of the approached users refused participation or did not show up. Inpatient: 9% of the respondents left the setting before the required two weeks and therefore no CIDI interview was recorded. ASI interviews of 11% of the inpatient respondents could not be retrieved by the treatment setting. The socio-demographic characteristics of the lost respondents in the outpatient and inpatient treatment settings did not differ from those of the interviewed users.

Diagnostic assessment

The diagnostic interview is a modified form of the Composite International Diagnostic Interview (CIDI) (Robins et al. 1989). This structured interview can be used by non-clinicians. The instrument was modified to reduce the interview time in order to be able to include opiate addicts outside of treatment in the study. The following categories of questions were considered less relevant or too threatening and were therefore deleted: tobacco dependence, somatization disorder, dissociative disorder, psychoactive substance dependence, organic disorder and psychosexual disfunctioning. To further reduce the interview time ICD-10 questions were left out as well. An interview lasted about 90 minutes on average. The disorders about which will be reported in this study are: major depression, dysthymia, mania, generalized anxiety, agoraphobia, panic disorder, social phobia, simple phobia, alcohol abuse, alcohol dependence, obsessive compulsive disorder, schizophrenic disorders and eating disorders (anorexia nervosa and boulimia). These are all axis I disorders. Although ASP disorder is an Axis II (personality) disorder the criteria to assess this disorder were added in order to make comparisons with previous studies. The diagnostic hierarchy of the DSM-III-R was not used. Both lifetime and recent diagnoses were computed. The latter refers to the past 6 months. The original instrument showed good interrater reliability (Wittchen et al. 1991), test-retest (Semler et al. 1987) and reliability and validity of all diagnoses except acute psychotic disorder (Wittchen et al. 1989, Sprengler & Wittchen 1989). The reliability and validity of the adjusted instrument is not threatened by our deleting some of the sections and ICD-10 questions, of which the coordinator of the CIDI activities in the Netherlands assured us (v.d. Brink, personal communication 1996). The CIDI interviews in the inpatient groups have been conducted about two weeks after the respondents entered the detoxprogramme. Although it is recommended to conduct the interview at a minimum of one month after the first day of detoxification, we were not able to realize this because the detoxprogramme lasts only two weeks.

The CIDI interviews were performed by eight trained interviewers. At regular intervals meetings were organized by the first author (psychologist) to discuss the interview techniques and the results. All respondents in treatment filled in an informed consent and respondents outside of treatment and in the outpatient methadone programme received a payment for their participation.

In addition to the presentation of data at disorder level, categories are often formed (Rounsaville et al. 1982, Limbeek van et al. 1992, Hendriks et al. 1990, Abbott et al. 1994). In this study four categories were made. 'Affective disorders' exist of major depression, dysthymia and manic disorder. The category 'Anxiety disorders' contains generalized anxiety, panic disorder, agoraphobia, social phobia, simple phobia, agoraphobia and obsessive compulsive disorder. Alcohol dependence and alcohol abuse together form one category and ASP disorder another.

Analyses

All comparable studies, except for one (Limbeek van et al. 1992), described percentages of psychopathology for one total sample, which often existed of respondents acquired in different treatment settings. To compare the results of this study with the studies described above first the prevalences for the total group will be described. Then demographic characteristics are described briefly per category of disorders. A description of possible differences in psychopathology for addicts outside of treatment and in two treatment settings was made by performing chi-square tests with continuity correction at DSM-III-R disorder level. Finally this comparison was repeated by applying logistic regression which enabled adjustment for sex, age and cultural background. In the logistic regression analysis the group outside of treatment was used as the reference group.

Results

Total group

The results in table 2 give an indication of the psychopathology for the total group by presenting lifetime and recent (6 months) DSM-III-R disorders measured with the CIDI. It appears that over 80% of the opiate addicts reported at least one disorder (excluding ASP disorder) on lifetime basis. The most common lifetime disorders are alcohol disorders (57.6%), social phobia (29.9%) and simple phobia (27.9%). The Axis II ASP disorder is found for about one third of the addicts. Recent affective disorders appear to exist in almost one fifth of the opiate addicts and recent anxiety disorders in more than one third of the respondents. In general the recent percentages are much lower than the lifetime percentages. This is partly related to the difference in time. The chance on a recent disorder (6 months) is smaller than the chance on a lifetime disorder (since youth). Furthermore it would be interesting to know which of the lifetime disorders occurred before the onset of the addiction and which after the onset of addiction.

When these percentages are compared with the two studies discussed in the introduction it appeared that in the Dutch study of Van Limbeek and Van den Berg (1994) percentages for all lifetime disorders are consistently lower in the Dutch general population. A recent psychiatric disorder is found for nearly 23% of the respondents. For example the percentage of anxiety disorders (except simple phobia) is 34.3% in the general population versus 54.1% in the opiate addict population. The number of respondents with at least one affective disorder in the general population (16.2%) appears to be less than half the percentage of the addict population and the percentage of respondents with alcohol percentages (17%) less than one third.

Table 2. Percentages of lifetime and recent psychopathology in opiate addicts

DSM-III-R disorders	Lifetime n = 344	Recent n=344
Major depression	23.0	14.5
Dysthymia	19.8	10.2
Mania	3.2	1.2
Generalized anxiety	7.0	2.6
Agoraphobia	16.6	9.0
Social phobia	29.9	17.4
Simple phobia	27.9	20.6
Panic disorder	4.7	2.3
Agoraphobia + panic disorder	3.5	2.0
Alcohol problems (misuse/abuse)	57.6	25.6
Schizophrenia	4.5	1.2
Obs. comp. disorder	3.2	1.2
Eating disorder (anorexia/boulimia)	1.5	-
ASP disorder	32.8	-
Any affective disorder	32.6	19.8
Any anxiety disorder	54.1	36.6
Any diagnosis including ASP disorder	86.3	71.5
Any diagnosis excluding ASP disorder	80.5	59.0
Any diagnosis excluding alcohol disorders	76.2	64.5

The results of the American (CIDI) study (Kessler et al. 1994) show that all disorders are more prevalent in the sample of opiate addicts. The differences are largest in the section anxiety disorders. Over 54% of the addicted respondents report at least one of the anxiety disorders versus over 37% of the respondents in the American general population. The phobias contributed most to this difference. In the general population prevalences are found of 5.3% for agoraphobia, 13.3% for social phobia and 11.3% for simple phobia. All of which are at least twice as high among the opiate addicts. A large difference is also found with respect to alcohol disorders (abuse and misuse). The percentage of respondents with an alcohol disorder in the general population is 23.5% and in the opiate addict population 57.6%. ASP disorder is found less often for the general population (3.5%), which is true for major depression as well (17.1%).

Overlapping disorders

Many respondents appear to have more than one DSM-III-R disorder. Less than one fifth of the respondents of the total group never had a psychiatric disorder, a quarter of the respondents had one disorder at some point, about one fifth ever had two disorders and one third of the respondents reported three or more lifetime disorders.

The number of lifetime disorders varies between 0 and 8 per person with a mean of 2.0(SD:1.6). The number of recent disorders ranges from 0 to 7 with a mean of 1.1(SD:1.3). When the average number of recent disorders per treatment setting was computed, a

significant difference was found. Respondents in the non-treatment setting appeared to have a mean of 0.9(SD:1.1) disorders, respondents in the methadone setting 0.9(SD:1.3) disorders and in the inpatient settings 1.3(SD:1.3).

Categories of psychopathology by demographic characteristics

Table 3 presents sex distributions per category of psychiatric disorders. Important differences are found with respect to alcohol disorders and ASP disorder. Of the women 43.1% report an alcohol disorder (abuse/dependency) whereas among men the percentage is 60.9%. The percentage of women with an ASP disorder is also lower (15.4%) than the percentage of men with this disorder (36.9%). These findings are in line with the results of other psychopathology studies (Kessler et al. 1994, Rounsaville et al. 1982, Abbott et al. 1994). Other demographic characteristics showed no statistically significant differences, although ASP disorder appears to be more present among young opiate addicts (39.3%) compared to addicts over 35 years old (28.0%) (not in table). Alcohol disorders are more often reported by Dutch addicts (61.1%) than by addicts with a cultural background other than Dutch (50.0%)(not in table).

Table 3. Lifetime psychopathology by sex of opiate addicts

Categories of DSM-III-R disorders	Men	Women	sign.
Affective disorders	60.3%	66.1%	-
Anxiety disorders	52.3%	61.5%	-
Alcohol disorders	60.9%	43.1%	**
ASP disorder	36.9%	15.4%	***

* = $p \leq 0.05$, ** = $p \leq 0.01$ *** = $p \leq 0.00$

Addicts in different treatment settings and outside of treatment.

The results of the comparison of prevalences between addicts in different treatment settings and outside of treatment are presented in table 4. The main conclusions are that respondents outside of treatment report more simple phobias (lifetime and recent) and less lifetime alcohol disorders compared to addicts in the methadone group. Less respondents in the latter group suffer from lifetime dysthymia whereas generalized anxiety is reported more often among methadone respondents. The inpatient group differs from the group outside of treatment by reports of more alcohol disorders (lifetime and recent) and more ASP disorders. It is remarkable that over ninety percent of the inpatient addicts report at least one lifetime disorder, either with or without ASP disorder included. This percentage is not lowest in the group outside of treatment (75.5%) but in the methadone group (68.1%). The percentage of the respondents with at least one recent disorder is also highest in the inpatient group.

Table 4. Percentages of psychopathology for addicts outside of treatment and in different treatment settings

DSM-III-R Disorders	Lifetime			Recent		
	Outside of treatment	Methadone	Inpatient	Outside of treatment	Methadone	Inpatient
	n=82	n=93	n=167	n=82	n=93	n=167
Major depression	19.5	14.9	29.2	9.8	8.5	20.2
Dysthymia	23.2**M	10.6	23.2	11.0	6.4	11.9
Mania	2.4	4.3	3.0	-	2.1	1.2
Generalized anxiety	2.4*M	12.8	6.0	-	5.3	2.4
Agoraphobia	11.0	18.1	18.5	4.9	9.6	10.7
Social phobia	28.0	20.2	36.3	19.5	11.7	26.2
Simple phobia	39.0**M	21.3	26.2	26.8**M	10.6	16.7
Panic disorder	4.9	7.4	3.0	-	5.3	1.8
Agoraphobia + panic	4.9	1.1	4.2	3.7	-	2.4
Alcohol problems (misuse/abuse)	48.8**I	51.1	65.5	11.0*M***I	23.4	33.9
Schizophrenia	3.7	4.3	4.8	#	#	#
Obs. comp. disorder	2.4	3.2	3.6	#	#	#
Eating disorders	-	2.1	1.8	-	-	-
ASP	22.0***I	30.9	33.9	-	-	-
Any affective disorder	30.5	23.4	38.7	14.6	12.8	26.2
Any anxiety disorder	56.1	42.6	59.5	22.0*I	21.3	35.7
Any diagnosis including ASP	82.9***I	75.5	94.6	62.2***I	58.5	83.9
Any diagnosis excluding ASP	75.6***I	68.1	90.5	50.0***I	45.7	71.4
Any diagnosis excluding alcohol disorder.	73.2*I	61.7	85.7	57.3***I	48.9	76.8

* = p<0.05, ** = p<0.01, *** = p<0.00, * M= Group outside of treatment differs from methadone group, *I= Group outside of treatment differs from inpatient group, # = number of cases not sufficient

Adjusted results for the three groups

Table 5 presents the same comparison in unadjusted and adjusted odds ratios with corrections for sex, age and cultural background. The group outside of treatment is used as a reference group. It appears that the results in table 4 are confirmed, except for two relations which have lost statistical significance in table 4 after applying continuity correction of the chi-square test. These relations appear to be significant again when they are computed in unadjusted odds ratios. These relations are: the inpatient group having more

chance on a recent major depression and less chance on a lifetime or recent simple phobia compared to the reference group (outside of treatment).
Two changes occur after adjusting the results. Apart from some shifts in the level of significance, firstly the chance of inpatient respondents having a lifetime simple phobia appears to be partly explained by the confounders (sex, age, cultural background). Secondly the significant relation of more methadone respondents having recent alcohol problems compared to the group outside of treatment is explained by the confounders, while this effect remains unaffected for the inpatient group. The following differences per group continue to exist. Respondents in the methadone group have less chance on a dysthymia (lifetime) and a simple phobia (lifetime or recent) compared to the group outside of treatment. The inpatient group appears to have less chance on a simple phobia (lifetime or recent) as well, but more chance on alcohol disorders (lifetime or recent), on major depression (lifetime) and on ASP disorders compared to the group outside of treatment.

Table 5. Unadjusted odds ratios and adjusted odds ratios for psychopathology of opiate addicts in inpatient and outpatient treatment compared with opiate addicts outside of treatment.

DSM-III-R disorders	Lifetime				Recent			
	Methadone, n=93		Inpatient, n=167		Methadone, n=93		Inpatient, n=167	
	OR^A	OR^B (95% CI)	OR^A	OR^B (95% CI)	OR^A	OR^B (95% CI)	OR^A	OR^B (95% CI)
Major depression	0.72	0.80 (0.35-1.81)	1.70	1.74 (0.88-3.45)	0.86	0.94 (0.32-2.75)	2.35*	2.65* (1.10-6.37)
Dysthymia	0.39*	0.39* (0.17-0.92)	1.00	0.90 (0.46-1.77)	0.55	0.66 (0.22-2.00)	1.10	1.05 (0.42-2.59)
Mania	1.78	1.39 (0.23-8.20)	1.23	1.66 (0.22-12.70)	#	#	#	#
Generalized anxiety	5.85*	6.42 (1.33-30.95)	2.53	2.57 (0.53-12.53)	#	#	#	#
Agoraphobia	1.79	1.57 (0.65-3.89)	1.84	1.58 (0.69-3.64)	2.06	1.72 (0.23-1.27)	2.34	1.67 (0.53-2.10)
Social phobia	0.65	0.68 (0.33-1.41)	1.46	1.51 (0.82-2.79)	0.55	0.54 (0.23-1.27)	1.46	1.66 (0.53-5.30)
Simple phobia	0.42*	0.45* (0.23-0.90)	0.55*	0.53 (0.29-0.98)	0.32** *	0.35* (0.15-0.82)	0.54	0.46* (0.23-0.93)
Panic disorder	1.57	1.87 (0.49-7.19)	0.60	0.65 (0.16-2.63)	#	#	#	#
Agoraphobia + panic	0.21	0.28 (0.03-2.68)	0.85	0.69 (0.18-2.69)	0.02	#	0.64	0.47 (0.09-2.50)
Alcohol problems	1.10	0.93 (0.50-1.73)	1.99**	1.94* (1.08-3.51)	2.48*	2.02 (0.85-4.83)	4.16***	3.77*** (1.70-8.39)
Schizophrenia	1.17	1.60 (0.32-7.87)	1.32	1.60 (0.37-6.58)	#	#	#	#
Obs. comp. disorder	1.32	1.70 (0.27-10.85)	1.48	1.37 (0.26-7.34)	0.87	1.17 (0.07-19.8)	0.98	0.62 (0.05-7.53)
Eating disorders	#	#	#	#	-	-	-	-
ASP disorder	1.59	1.39 (0.68-2.86)	2.55***	2.34** (1.22-4.50)				
Any affective disorder	0.70	0.72 (0.36-1.44)	1.4	1.4 (0.77-2.59)	0.85	0.91 (0.38-2.22)	2.07*	2.24* (1.05-4.77)
Any anxiety disorder	0.58	0.63 (0.34-1.17)	1.15	1.10 (0.62-1.97)	0.96	0.95 (0.45-2.00)	1.98*	1.91* (1.00-3.66)
Any diagnosis (incl. ASP)	0.64	0.62 (0.29-1.34)	3.64***	3.35* (1.21-0.50)	0.86	0.73 (0.39-1.38)	3.17***	2.85*** (1.48-5.50)
Any diagnosis (excl. ASP)	0.69	0.73 (0.37-1.45)	3.06***	2.98** (1.34-6.60)	0.84	0.77 (0.42-1.44)	2.50***	2.42*** (1.34-4.38)

OR^A= unadjusted Odds Ratio, OR^B= adjusted Odds Ratio. Reference group is the group outside of treatment.
* = $p \leq 0.05$, ** = $p \leq 0.01$, *** = $p \leq 0.00$ # = number of cases not sufficient

Comment

Data Collection Limitations

Data in the inpatient settings were gathered in a consecutive admission design in which randomization was not possible. Therefore selection may have biased the results. The prevention of selection in the sample outside of treatment was an even greater challenge. Because of the impossibility to identify the sampling frame of hidden populations, such as heroin addicts without treatment contacts, no random sampling techniques could be used. Nor could the characteristics of the obtained sample be compared with those of the population. Given these circumstances we chose to use an elaborated type of snowball sampling with nominee selection. The theory on which this method is based, how it was employed and the comparison of the obtained sample with the total pool of nominees (substitute sampling frame) is discussed in another publication (Eland-Goossensen et al. in press). It appeared that there were no differences in socio-demographic characteristics and drug use characteristics between the sample and the pool of nominees, which was three times as big.

Furthermore the reliability of the results in this study might be limited because the data is based on retrospective self-reports of the respondents who were often under the influence of drugs. During the fieldwork respondents suffering of heavy withdrawal symptoms or strong intoxication were not interviewed, but in those cases the appointment was rescheduled to another time. In addition to distortions resulting of drug use effect memory distortions may also have influenced the quality of the information. This latter type of bias is not unique to addicted respondents, but it might be stronger among addicts than in other cases in which retrospective information is collected by self-reporting. Recently Hammersley (1994) discussed the importance of memory phenomena for addiction research from the point of view that among different research instruments for addiction, self-reports are and will remain an essential method. He described the limitations of memory functioning in general, the negative and positive aspects of interviewing intoxicated respondents and suggested ways to reduce memory bias.

Other limitations might be that the assessment in this study is based on a single interview, conducted by non-clinicians, and that respondents outside of treatment and in the methadone group were under influence of opiates, while the respondents in the inpatient group had to be interviewed after a period of two weeks detoxification. Several factors in the study design, such as the difficult interview situation outside of treatment, made this a practical necessity. However, in less demanding situations the diagnostic precision could have been improved by for instance comparing the diagnosis with a diagnosis of a clinician or by conducting more than one interview on psychopathology. Because of these limitations the data have to be interpreted as estimates of the psychopathology of opiate addicts rather than as definite diagnoses.

Total group

An important result in this study is that prevalences of psychopathology were higher for all disorders in the opiate addicted population than in the general population. This was already described by Miller and Fine (1993). The most prevalent axis I disorders were: alcohol disorders, social phobias and depression. Only one of the axis II disorders has been assessed. This is ASP disorder which was reported by 32.8% of the respondents. When the presented prevalences were compared with five other studies on psychopathology among opiate addicts, as described in table 1, similarities as well as differences emerged. Two studies found higher percentages for depression (Rounsaville et al. 1992, Hendriks 1990). The latter study described a higher percentage for ASP disorder as well, but that resulted from the much wider criteria for ASP used in the DSM-III. This was confirmed by the study of

van Limbeek et al. (1992) in which the DSM-III criteria were also used. They too found also a higher percentage of ASP disorders. The other difference with van Limbeek's study was the lower percentage for phobias, which also resulted from differences between the DSM-III and DSM-III-R criteria applied in the DIS and the CIDI. It appeared that in almost all other studies where the CIDI was not used lower percentages were found for anxiety disorders. Furthermore the studies varied in definition for 'recent' disorders. Hendriks (1990) and Regier et al. (1990) chose for past six months, Rounsaville et al. (1982) for the present (point prevalence), and both van Limbeek et al. (1992) and Kessler et al. (1994) defined the past 12 months as 'recent'.

Demographic characteristics.
The result that men reported an alcohol or ASP disorder significantly more often was in line with the results of comparable psychopathology studies (Kessler et al. 1994, Rounsaville et al. 1982, Abbott et al. 1994).

Different settings
An important aim of this article was to find out whether if opiate addicts who were sampled in different treatment settings and outside of treatment report similar prevalences of psychopathology. It emerged that they did not. In the inpatient group more respondents reported at least one psychiatric disorder (recent and lifetime) compared with the other two groups. These respondents mentioned more major depression (lifetime), more alcohol disorders and more ASP disorder. The larger number of respondents with at least one recent disorder in the inpatient groups implies that these psychiatric problems may prompts them to seek inpatient treatment. This was also described by Rounsaville and Kleber who found, parallel to our results, that opiate addicts in treatment were more depressed than those outside of treatment. Another important result is that the addicts who apply for inpatient settings are more often diagnosed as having an ASP disorder. This has been described as a predictor of negative treatment response (Rounsaville & Kleber 1985, Rounsaville et al. 1986) notwithstanding the fact that equally negative responses were found for patients with other psychiatric diagnoses. However, in a recent study of Cacciola et al. (1995) among cocaine and alcohol dependents antisocial personality disorder or an adult antisocial lifestyle, measured with DSM-III criteria, did not predict short-term treatment response. Another difference was that more simple phobias were reported in the group outside of treatment. This might be an interesting result with respect to barriers that prevent people from seeking professional help. Further analyses may point out the type of phobias in the group outside of treatment and whether they are experienced as a barrier with regard to seeking help.
In contrast with our expectations we found that respondents who had applied for the methadone programme reported least psychiatric problems. For instance in this group the lowest percentage was found for respondents with at least one disorder. In the study of van Limbeek et al. (1992) the methadone group also reported less psychiatric problems compared to the respondents in a clinical detoxification programme. These authors explained this result as a consequence of the different cities. The fact that in our study all respondents came from within one city and the same result was still found, confirms the conclusion that the population applying for a methadone programme truly experiences less psychiatric problems. What could the reasons be for the respondents in the methadone group to report less psychiatric problems? Although we were not able to explain the result entirely some possible interpretations were found. Maybe respondents asking for methadone do not mention problems in other life areas because they know the programme is not aimed at solving these other problems. Another explanation could be that respondents have shorter drug use careers and less time to develop comorbid problems.

However, we know that the respondents in the methadone group do not represent heroin users who have just started with their drug use. On the contrary, the group appears to be older on average compared to the two clinical samples (unpublished data). Apart from the former interpretations bias in the results should be considered as a possible explanation. Could it be that addicts who seek help do not find the intake situation in this programme trustworthy enough to express their psychiatric problems? Or are they less aware of their problems, simply because their treatment history is shorter? In this study we come no further than to describe that respondents who ask for methadone report less problems; further research might be needed to explain and understand this result completely.

Implications of the study

The results of this study show that many opiate addicts have psychiatric comorbidity. We did not try to disentangle the causality of the psychiatric and addictive problems, because we think these problems are often intertwined and it is difficult to distinguish between latent, primary, secondary and interactive symptoms and disorders. The complexity of the problems, however, illustrates that good screening is of paramount importance, which is underlined by the large amount of opiate addicts with comorbid psychiatric problems and the negative impact that psychiatric severity was found to have on treatment success. With this publication we tried to contribute to a better understanding of the nature and extent of these problems, which could be a step towards the development of therapies to treat these combined disorders. An important result is that among addicts who apply for inpatient settings ASP disorder occurs more often. This may be a reason to start evaluating the characteristics of this subgroup and seek for specific therapeutic approaches. For instance McLellan et al. (1983) showed that for addicts with an ASP disorder relaxation of programme rules might prevent irritation between counsellors and patients and increase compliance. For addicts with axis I psychiatric comorbidity intensive counselling and (individual) psychotherapy might be successful. When these suggestions are worked out further they form an obvious step towards the practice of matching patients and treatments on psychopathology.

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CHAPTER 4.2

Do opiate addicts with no, moderate or severe psychopathology differ in drug use career and psychiatric history?

Introduction

In past decades the development of the heroin career has been described by several authors (Rosenbaum 1981, Crawford et al. 1983, Swierstra 1990 and Prins 1995). However, during these years heroin addiction problems have become more and more complex. Drug use itself changed because the majority of heroin addicts uses several different substances in one day (IVV 1996, Toet 1996) and several comorbid problems appeared. The most important of these is psychopathology which is diagnosed more frequently in addict populations compared to the general population (Miller & Fine 1993). These psychiatric problems seriously influence the drug use career. It emerged that addicts with severe psychopathology reported more problems with medical health, employment, social relations, alcohol use and drug use (McLellan et al. 1984, Rounsaville et al. 1987). Treatment success too was found to be influenced negatively by severe psychopathology (McLellan et al. 1983, Gerstly et al.1990, Rounsaville et al. 1987). Although classification systems can be used to determine the kind of psychopathology and type of addiction, it is often not clear whether psychiatric diagnoses and addiction diagnoses are independent, interdependent or whether they reflect one and the same disorder with two different names. Differences across diagnostic systems also contribute to the complex association of these comorbid problems. Both types of problems seem to interact and tend to become more severe (Sheehan 1993). Only at the point when addicts present themselves for treatment are comorbid addiction and psychopathology measured. At that stage it is difficult to disentangle the relationship between these so-called 'dual diagnosis' problems. Psychopathology and addictive disorders may a) occur separately without causal relation, b) appear in the self-medication form, meaning that the drugs are used to alleviate symptoms of psychiatric disorders (Weiss et al. 1992) c), occur when drug use triggers psychopathology in already susceptible persons (Miller et al. 1994) or d) take place when psychiatric disorders occur as a sequel to dependence (van Limbeek et al. 1992). For instance Ries (1993) found that on the one hand latent schizophrenia may be aggravated under the influence of substance use and on the other hand drug induced paranoid psychosis resulted from for instance crack use. Furthermore recent studies showed that in nearly 80% of respondents with comorbid substance use and anxiety disorders the mental disorder occurred first (Kessler et al. 1994, DuPont 1995). In this article insight into the development of psychiatric and addiction problems will be gained by comparing addicts with no, moderate and severe psychopathology with respect to drug use career and psychiatric history. Furthermore the relation between addiction and psychopathology will be described by analysing if psychopathology appeared before or simultaneous with the addiction.

Categories of dual diagnosis problems

Notwithstanding the fact that the term dual diagnosis is often used in literature it is considered to be a very broad definition, including a wide heterogeneity of various psychiatric disorders that coexist with addiction. For opiate addicts the used definitions result in very high prevalences. In two studies the percentage of opiate addicts with one or more psychiatric disorders was found to be over 80% (Rounsaville et al. 1982, Hendriks 1990) and in another 77% (Abbott et al. 1994). This illustrates that the clinical value of this definition is limited because it has insufficient discriminating abilities. Several criteria were used in literature to come to a more restricted definition of (subgroups of) dually diagnosed

addicts. A procedure which is often used is to define subgroups with no, moderate and severe psychopathology based on data of the Addiction Severity Index (McLellan et al. 1983, Stoffelmayer et al. 1989). However, when psychopathology is measured with DSM criteria there are no such dimensional measures of low, moderate and severe psychopathology. Although in many publications on dually diagnosed addicts the categories of affective disorders, anxiety disorders, alcohol disorders and antisocial personality disorder are used (Rounsaville et al. 1982, Hendriks 1990), these categories are not mutually exclusive and therefore not 100% effective for the aim of this publication. Several attempts to distinguish between subgroups based on the DSM classification were found in literature. For instance Lehman et al. (1994) defined a priori six subgroups, four of which are based on the recent or lifetime occurrence of dual diagnosis and the certainty of the diagnosis. The other two groups had solely psychiatric problems and a single addiction problem. These criteria are not optimal for our purpose because no distinction is made with regard to the severity of psychiatric disorders. Another categorization was made by Cancrini (1994) who described four types of heroin addicts based on the nature of the psychopathology (adjustment disorders, neurotic disorders, psychosis/borderline situations and sociopathic personality). He added implications for treatment of the four groups. His typology is difficult to compare with other studies, because it is based on clinical assessment and not so much on information from a structured psychiatric interview. The diversity in categories became even greater because other researchers did not use type of psychopathology or causality of the disorders as a criterium, but the number of psychiatric disorders. For instance Alterman et al. (1993) formed three groups of dually diagnosed addicts according to the number of lifetime psychiatric diagnoses in addition to addiction. The high group existed of two or more diagnoses, the moderate group was qualified by one additional diagnosis and the low group for no diagnosis. However, the addicts with for instance one disorder vary from those with a phobia to those with schizophrenia. These disorders greatly differ in severity and therefore these categories based on number of disorder do not meet our demands. Woody et al. (1986) used a division in axis I and axis II disorders. They divided their respondents into opiate addicts without psychopathology, opiate addicts plus an additional psychiatric disorder and opiate addicts plus an antisocial personality disorder. Because previous studies (McLellan et al. 1983, Rounsaville et al. 1986) showed that it was not so much the type of psychopathology but more the severity of the psychopathology that influenced treatment success of opiate addicts as well as the number of drug-related problems, the categories of disorders have to reflect these differences in severity. The groups defined by Woody were most useful in this respect. This definition was used previously by Limbeek van et al. (1992) as well.

Methods

The main reason for studying the relation between psychopathology and drug use career in opiate addicts originates from a larger study on differences between opiate addicts in and outside of treatment. Addicts in three types of treatment settings and outside of treatment are compared with respect to recent problems with drug use and comorbid problems (among which psychopathology) and long-term variables such as drug use career and treatment history. In order to be able to identify confounders in the study design a better understanding is needed of the relation between various types of dual diagnosis addicts and long-term variables. In itself this relation is of interest with respect to the etiology, the treatment and the prevention of dual diagnosis problems.

Settings

All subjects were interviewed in The Hague, a medium sized city in The Netherlands with about 440.000 inhabitants. Four strata were formed: opiate addicts outside of treatment, in an outpatient methadone programme, in an inpatient detoxification centre and in a therapeutic community. These are the main treatment modalities for heroin addicts in The Netherlands. Previous analyses showed that respondents in the detox group and the TC group did not differ significantly at any of the variables. Therefore it was decided to combine both groups to form one 'inpatient' group.

The group outside of treatment existed of 82 opiate addicts, who were paid for their participation. They were located and interviewed by a community fieldworker (someone who knows the ins and outs of the drug using culture and is trained in interviewing) and the first author. The respondents were selected and reached by snowball sampling with random nominee selection. First different networks of community addicts were described carefully on a map. In every network a randomly selected addict was interviewed, who nominated up to six other heroin addicts of which the next respondent was selected randomly. In this way 21 chains could be formed with a maximum of nine stages. During the total fieldwork period of nearly three years information was collected about networks of heroin addicts that might have been missed. The method has been discussed further in another publication (Eland-Goossensen et al. in press). The methadone group consisted of 94 respondents, who were randomly selected from the entrants to the methadone programme. This is a low-threshold outpatient programme aimed at harm-reduction. Clients are not forced into counselling, urine-sample checks or detoxification. The methadone is daily supplied from a bus that has several stations in the city. Clean needles and condoms are also available. The inpatient group consisted of 151 addicts who applied for a 'detox only' of about two weeks (n=74) or detox period followed by a therapeutic community programme (n=77). These are both inpatient settings of which the latter is a long-term treatment characterized by intensive therapy sessions. All the addicts that passed the research criteria were asked to participate.

The non-response numbers in the three settings were: outside of treatment: 22% of the users identified by the chain referral method could not be located or refused to participate and 9% of the approached users did not show up at the second or third appointment. Methadone: 26% of the approached users refused participation or did not show up. Inpatient: 9% of the respondents left the setting before the required two weeks and therefore no CIDI interview was recorded. Interviews of 11% of the inpatient heroin users could not be retrieved by the treatment setting. The socio-demographic characteristics of the lost respondents in the treatment settings did not differ from those of the interviewed users.

Outside of treatment the subjects were interviewed by a psychologist (first author) and a community fieldworker (someone who knows the drug using culture from inside and is trained in interviewing). In the treatment settings the interview was integrated in the intake procedure, which took place before the respondents actually entered the treatment settings. Informed consents were obtained for all respondents. The interviews were conducted by trained staff of the settings. During the data collection meetings were frequently organized with all the interviewers. At the meeting the interviews were commented on and discussed by the researcher.

Subjects

All subjects in and outside of treatment were required to meet the following criteria: (1) opiate dependency according to the DSM-III-R criteria for at least the past two years, (2) they should be 18 years or older, (3a) in the treatment groups the respondents should have stayed at least two weeks in the specific setting and (3b) outside of treatment the respondent should not have had any treatment contacts for longer than two weeks during the past two years.

In this study the total group of opiate addicts sampled in three treatment settings and outside of treatment (N=327) was divided into three groups according to the severity of psychopathology (Woody et al. 1985). Alcohol disorders were considered as dependence disorders rather than psychiatric disorders and are therefore not included in this comparison, except for table 7 in which the onset of various types of disorders is described. The first group existed of opiate addicts without any lifetime DSM-III-R diagnosis. The second group consisted of addicts with light to moderate psychiatric disorders. These are all so-called axis I disorders. Addicts diagnosed for an antisocial personality disorder (Axis II) formed the third group. Many of these respondents were classified for axis I disorders as well.

Instruments

Two instruments were used to collect the data. The first instrument is the revised Addiction Severity Index (ASI^R) (McLellan et al. 1980, Hendriks et al. 1990). The ASI^R provides information on six life areas. These areas are 'physical health', 'employment', 'alcohol/drug use', 'legal status', 'social functioning (including family and other social relations)', 'psychological functioning'. Both life-time and recent problems are addressed. The latter refer to the past month. The second interview that was used is the modified Composite International Diagnostic Interview (CIDI) (Robins et al. 1989). This structured interview which is used to generate DSM-III-R diagnoses can be conducted by non-clinicians. The instrument was modified to diminish the interview time in order to interview opiate addicts outside of treatment. Therefore the following categories of questions were deleted: tobacco dependence, somatization disorder, dissociative disorder, psychoactive substance dependence, organic disorder and psychosexual malfunctioning. Furthermore the ICD-10 questions were left out. The remaining DSM-III-R disorders are: major depression, dysthymia, mania, agoraphobia, panic disorder, social phobia, simple phobia, generalized anxiety disorder, alcohol abuse, alcohol dependence, obsessive compulsive disorder, schizophrenic disorders and eating disorders. Because of the importance of ASP disorder with respect to the treatment of addicts (Gerstly et al. 1990) the DSM-III-R criteria to assess antisocial personality disorder were added. The diagnostic hierarchy of the DSM-III-R was not used. Both lifetime and recent diagnoses were computed for the Axis I disorders. Recent diagnoses refer to the past 6 months. Note that lifetime Axis I diagnoses refer to the question whether the disorder ever occurred. The ASP (Axis II) prevalences are considered only as a lifetime disorder. The original instrument showed good interrater reliability (Wittchen et al. 1991), test-retest (Semler et al. 1987) and reliability and validity of all diagnoses except acute psychotic disorder (Wittchen et al. 1989, Sprengler & Wittchen 1989). The reliability and validity of the adjusted instrument is not threatened by our deleting some of the sections and ICD-10 questions, of which the coordinator of the CIDI activities in the Netherlands assured us (v.d. Brink, personal communication 1996).

Operationalization of drug use career

In a study of Power et al (1992) the concept of drug use career is operationalized by the following items: age of first use, age of regular use, duration of use of the current type of drug, number of drugs used on lifetime basis and number of drug-related arrests or sentences. Although drug use career and history of delinquency are two different aspects, they are often described together. In the current study this is also the case. The following items of the section drug and alcohol use of the ASI^R are selected to describe aspects of the drug use career: duration of use of various substances, total number of drugs used, injecting, overdoses, deliria. Furthermore the following legal items were added: ever in jail, in jail for possession of or dealing in drugs, for crime against property, violent crime or other crimes and in jail for longer than two years.

Treatment history of addiction will be described under the header of drug use career. In some studies in which the concept of treatment history was operationalized, only a general distinction between treatment received or no treatment received was used, regardless of the type of treatment (Hasin 1994). Other authors used information about types of previously received treatments, the number of treatment episodes and duration of episodes (Leigh et al 1984). Furthermore failed attempts to receive professional help were integrated in the concept (Oppenheimer et al. 1988), or reasons for breaking of a programme (Sheeham et al. 1986). In the current study the following aspects of treatment history are chosen: number of treatment episodes, number of treatment types, participation in a methadone programme, a detox programme or a long-term clinical programme. Effects of treatment are described in terms of the percentage of respondents staying clean after leaving a methadone programme, a detox programme or a long-term clinical programme.

The concept of psychiatric history
In order to describe the psychiatric history the following analyses were employed. Firstly the occurrence of various types of disorders (affective, anxiety, alcohol) was described. Secondly also history of treatment in mental health settings was recorded in terms of ever having been in inpatient or outpatient treatment settings for psychiatric problems, and current need for psychiatric help.

Analyses
A chi-square test has been used for examining differences in dichotomous variables and analysis of variance for differences in means. Due to the multiple comparisons that were made in this study, the significance level was adjusted to 0.01 according to the Bonferroni correction (Altman 1991) for comparisons of more than two groups. Because this correction is conservative, some significant results may not be described. Therefore few tendencies to significant results (with still a P-value smaller than 0.05) are sometimes mentioned in the text as well.

Results

This section successively contains a general description of the three respondent groups, and a description of the drug use career and psychiatric history for these groups. Table 1 shows the socio-demographic characteristics for respondents with no, light to moderate and severe psychopathology. One significant difference is found. The group with severe psychopathology consists of more men than the group with moderate psychopathology. This confirms a previously described pattern of men developing ASP disorders more often (Rounsaville et al. 1982).

Problems in various life areas
The problems are described in terms of average severity ratings of the ASI^R (see table 2). These ratings range from 0 (no problems/need for help) to 9 (extreme problems/need for help). It appears that the groups with light to moderate and with severe psychopathology report more problems with drug use, legal functioning, social relations, and as could be expected, with psychological functioning. Legal problems are found most often in the group with severe psychopathology. This group shows an average rating of 3.7 for legal problems, whereas the other two groups have ratings of around 3. This result might be related to the nature of the ASP personality disorder.

Table 1. Socio-demographic characteristics of opiate addicts with no, moderate and severe psychopathology (CIDI).

	No psychopathology	Light-moderate psychopathology	Severe psychopathology	sign.
Percentages	n=78	n=138	n=108	
Sex (men)	83.3	71.1	90.7	***
Age (under 25)	16.7	13.6	24.1	-
Age (25 - 34)	47.4	52.1	49.1	-
Age (35 and older)	35.9	34.3	26.9	-
Marital status (married)	10.3	9.3	9.3	-
Cultural background (Other than Dutch)	30.8	31.7	25.2	-

* = p≤0.05 ** = p≤0.01 *** = p≤0.00

Table 2. Severity ratings of the ASI[R] life areas of opiate addicts with no, moderate or severe psychopathology (CIDI).

	No psychopathology	Light-moderate psychopathology	Severe psychopathology	sign.
Averages	n=78	n=138	n=108	
Health	1.4(2.2)[1]	2.1(2.0)	1.7(2.1)	*
Employment	3.8(1.8)	3.7(1.6)	3.8(1.9)	-
Alcohol	1.2(1.7)	1.5(2.0)	1.7(2.1)	-
Drugs	5.5(1.4)	5.8(1.4)	6.1(1.1)	**
Legal	3.1(2.3)	2.9(2.1)	3.8(2.1)	**
Social	3.1(1.7)	4.0(2.0)	4.0(1.7)	***
Psychological functioning	2.3(2.1)	4.0(2.3)	4.0(2.2)	***

1. Standard deviation between brackets. * = p≤0.05 ** = p≤0.01 *** p≤0.00

Drug use career

When the three groups are compared with respect to drug use career (table 3) the average duration of heroin use seems to be comparable for the three groups. This implies that severity of psychological problems is not related solely to duration of heroin use. No differences are found between the groups with respect to consumption of other substances. In general the addicts with severe psychopathology appear to have used more types of drugs on average. When the groups are compared with respect to substances used in the past month (not in table) no differences emerge, except with respect to two substances: alcohol and methadone. Past month alcohol use was reported least in the group without psychopathology (16.7%), more in the group with light to moderate psychopathology (23.2%) en most in the group with severe psychopathology (33.6%, p<0.03). Past month methadone use was reported most in the 'moderate' group (51.4%), less in the 'severe' group (36.4%) and least in the 'without' group (29.5%, p<0.00)

The legal aspects of the drug use career are presented in table 4. One difference appears. More respondents with severe psychopathology appear to have been in jail for violent crimes. This is again possibly related to the ASP disorder.

Table 3. Aspects of drug use career of opiate addicts with no, moderate or severe psychopathology (CIDI).

Percentages/Averages	No psycho-pathology n=78	Light-moderate psychopathology n=138	Severe psychopathology n=108	sign.
Average length of heroin use (years)	7.8	8.6	8.1	-
Used cocaine ever regularly[1] (%)	82.1	94.9	88.8	*
Used amphetamines ever regularly (%)	25.6	37.0	30.8	-
Used prescribed drugs ever regularly (%)	35.9	48.6	47.7	-
Used cannabis[2] ever regularly (%)	71.8	79.0	86.0	-
Used alcohol[3] ever regularly (%)	42.3	55.1	55.1	-
Average number of drugs used	3.4	4.2	4.1	***
Overdoses ever (%)	11.5	19.6	24.3	-
Injected ever[4] (%)	34.6	44.2	54.2	*
Clean in the past 3 years (%)	53.8	67.2	73.8	*

1. For three days a week or more. 2. In large amounts. 3. Five glasses or more. 4. No differences were found between the groups in unsafe injecting behaviour. * = $p \leq 0.05$ ** = $p \leq 0.01$ *** = $p \leq 0.00$

Table 4. Criminal activities of opiate addicts with no, moderate or severe psychopathology (CIDI).

Percentages	No psychopathology n=78	Light-moderate psychopathology n=138	Severe psychopathology n=108	sig n.
Ever in jail	64.1	57.9	75.0	*
In jail for possession/dealing of drugs	12.8	14.5	22.2	-
In jail for crime against property	52.6	47.8	62.6	-
In jail for violent crime	16.7	15.9	38.0	***
In jail for other crimes	12.8	8.7	8.3	-
Over two years in jail.	16.7	10.1	23.4	*

* = $p \leq 0.05$ ** = $p \leq 0.01$ *** = $p \leq 0.00$

Furthermore drug treatment history is included in the concept of drug use career as well. The few significant differences in table 5 show that the drug treatment histories of respondents in the three groups are comparable. Differences are not found for one single item in this table.

Psychiatric history

Table 6 presents results on the psychiatric history of addicts in the three groups. Respondents with light to moderate psychopathology more often report any of the lifetime anxiety disorders. Differences for affective disorders (lifetime and recent) and anxiety

Table 5. Treatment history for addiction of opiate addicts with no, moderate or severe psychopathology (CIDI).

	No psycho-pathology	Light-moderate psychopathology	Severe psychopathology	sign.
	n=78	n=138	n=108	-
Average number of treatment episodes	4.3(4.1)[1]	5.3(4.5)	5.4(5.5)	-
Average number of treatment types	1.7(1.2)	2.0(1.2)	2.0(1.3)	-
Methadone programme ever (%)	76.9	81.9	78.5	-
Detox programme ever (%)	41.0	51.4	52.3	-
Long-term clinical programme ever (%)	17.9	24.6	35.5	*
Clean after methadone (%)	33.3(60)[2]	29.2(113)	31.0(84)	-
Clean after detox programme (%)	37.5(32)	26.8(71)	33.9(56)	-
Clean after long-term clinical programme (%)	64.3(14)	76.5(34)	71.1(38)	-

1. Standard deviation between brackets 2. Percentage was computed for respondents participating in the treatment setting (n between brackets) * = $p \leq 0.05$ ** = $p \leq 0.01$ *** = $p \leq 0.00$

disorders (recent) between respondents with moderate and with severe psychopathology are smaller.

When treatment history in mental health institutions is analysed, it appears that the three groups score as was expected. Respondents without psychopathology report significantly less need for help and less treatment experiences for psychiatric problems than respondents with moderate to severe psychopathology. The two groups with psychopathology appear to score about equally with respect to psychiatric treatment and need for help.

Sequence of addiction and psychiatric disorders

In table 7 the age at which psychiatric disorders began is compared with the onset of regular opiate use (at least three times a week for six months or longer). This has been done for respondents with axis I psychopathology, except for those with a social or simple phobia. The reason for this is that simple and social phobias are often being experienced as fear of heights or shyness both of which have a lifetime character. These relatively light disorders mask the onset of more severe disorders at a later age. Therefore the onset of the simple and social phobias in group two are described separately. Furthermore addicts with schizophrenic disorders (n=15) were described separately because of the serious character of this type of disorder. Because of the large number of opiate addicts with alcohol problems the age at which opiate and alcohol addiction began is compared. Antisocial personality disorder was excluded from the comparisons because of the life-time character of this axis II disorder.

Table 6. Lifetime and recent psychopathology of opiate addicts with no, moderate or severe psychopathology (CIDI).

	No psychopathology (n=78)	Light-moderate psycho-pathology (n=138)	Severe psycho-pathology (n=108)	sign.
Ever any affective disorder [1] [2] (%)	-	47.1%	36.1%	-
Ever any anxiety disorder [1] [2] (%)	-	83.6%	55.6%	***
Ever any alcohol disorder (%)	42.3%	61.4%	60.2%	*
Recent any affective disorder [1] [2] (%)	-	26.4%	25.9%	-
Recent any anxiety disorder [1] [2] (%)	-	25.7%	15.7%	-
Recent alcohol disorder (%)	16.7%	24.3%	34.3%	*
Outpatient psychiatric treatment ever (%)	11.5%	34.1%	29.6%	***
Inpatient psychiatric treatment ever (%)	2.6%	10.9%	12.0%	-
Subjective need for psychiatric help (current) (%)	20.5%	49.3%	51.9%	***

[1] Alcohol disorders not included. [2] Significance tests were only performed for groups with psychopathology. * = $p \leq 0.05$ ** = $p \leq 0.01$ *** = $p \leq 0.00$

For the respondents with psychopathology, apart from those with only a simple or social phobia or a schizophrenic disorder, it is found that 43.4% experiences the opiate addiction first, whereas 48.2% reports psychiatric disorders such as for instance major depression before that previously. A minority of the respondents (8.4%) experiences the beginning of both types of disorders simultaneously.

For the respondents with social or simple phobias (and other disorders) it appears that for 15.7% the opiate dependency came first, for 80.7% the onset of the phobia came first and 3.6% experienced the beginning of the addiction and phobia simultaneously. Fifteen respondents are diagnosed with a lifetime schizophrenia or a schizophreniform disorder. Six of these respondents were addicted to opiates before the psychiatric disorder appeared. The mean number of years between the manifestation of the dependency and the psychiatric disorder is 4.6 years. For four respondents the opiate addiction and the schizophrenic disorder started simultaneously, whereas five of the respondents with this disorder experienced the schizophrenic disorders first.

In total 189 respondents received an alcohol disorder diagnosis. Of 175 respondents the onset of regular opiate use could be compared with the onset of alcohol disorders. It appears that 44.0% regularly used opiates first, whereas 50.9% were classified for an alcohol disorder before using opiates regularly. For 5.1% of the respondents the two phenomena started in the same year.

Table 7. Sequence in onset of opiate addiction and psychopathology

Type of disorder	Onset of opiate addiction first	Onset of psychiatric disorder first	Onset of both disorders in same year
Light to moderate disorders, except for social or simple phobia (n=84)	43.4%	48.2%	8.4%
Social or simple phobias (n= 83)	15.7%	80.7%	3.6%
Schizophrenic disorders (n=15)	40.0%	26.7%	33.4%
Alcohol disorders (n=175)	44.0%	50.9%	5.1%

Conclusions and discussion

Limitations of the study

One of the limitations of this study is the ratio of the subsamples in the total sample. In this design each subgroup (methadone, detox, therapeutic community, no treatment) existed of a more or less equal number of people, whereas in reality a larger population of respondents applies for methadone programmes than for inpatient settings. The size of the population of opiate addicts outside of treatment is probably the largest. Another methodological problem is that the representative value of the sample outside treatment in relation to the general population cannot be determined because the sampling frame of the group outsid etreatment is missing. Although great care was taken to create the best possible sample, higher class, isolated heroin addicts or well-integrated, working addicts may be insufficiently be represented.

Another flaw, be it that a solution is not available yet, is the bias that may occur when relying on self-reports, especially when type and amount of drug use and the psychiatric complaints are investigated by non-clinicians that use a one-off structured interview. We cannot rule out that bias has influenced the results. Therefore the prevalences described here should be interpreted as estimates rather than as definite diagnoses.

The present results indicate that the groups with no, light to moderate or severe psychopathology differ in drug use career. It was not the duration of drug use which was different, but more the number of drugs used. Respondents with light to moderate or severe psychopathology report the use of more types of drugs at a lifetime basis.

Our results with regard to primary or secondary occurrence of psychiatric disorders showed that in a substantial number of respondents psychiatric disorders occur before as well as after the addiction. It appeared that opiate addiction both as a primary and as a secondary disorder was represented more or less equally for alcohol, schizophrenia and other disorders. The analysis of respondents with social and simple phobias showed another pattern. The bulk of these phobias started before the dependency. This could mean that in the study of DuPont (1995) the high percentage of 79.3% of the respondents with substance use disorders in which an anxiety disorder occurred first results from the large number of social and simple phobias.

How valuable are these data on the onset of psychiatric disorders and addiction disorders? Some authors say that the historical information that is needed to establish which disorder came first is a) not available, b) unreliable, and/or c) does not add anything to assessment or treatment of the acute patient (Ries 1993). Other authors considered the primary/secondary distinction to be important (Lehman et al. 1989). By publishing these data we aim to establish a greater understanding of combined psychiatric and addiction disorders. Information on secondary and primary disorders may be useful for other

applications such as for instance outreach activities, the prevention of the development of psychiatric disorders in opiate addicts and outreach activities that attempt to control these. From this point of view it is interesting that substantial numbers of all kinds of disorders (except social and simple phobia) were developed after the onset of opiate use. To what extent these disorders really (partly) are the result of the substance use or (partly) the result of the circumstances of drug use has not yet been described. Furthermore the results suggest that addicts with psychiatric disorders use more types of drugs. An interesting hypothesis to be investigated is if the development of psychopathology is related to the use of (certain combinations of) drugs. Finally, in this study psychiatric symptoms which are a direct, temporary consequence of the drug use were not included. These symptoms receive a special code in the CIDI and can be analysed as well. This was done by Ries (1993) for alcohol, cocaine, marijuana, hallucinogens but not specifically for opiates. It was described that these drug induced psychiatric disorders clear within weeks to months after giving up the habit.

Implications

In this study the relation between long-term influences such as drug use career and psychiatric history was described for opiate addicts with no, moderate or severe psychopathology. According to the large numbers of opiate addicts with comorbid psychopathology, it is not only necessary to treat the combination of problems, but we also underline the need to pay attention to the prevention of psychiatric symptoms to occur during substance use by means of outreach programmes. Furthermore we do acknowledge that psychiatric and addiction problems can be part of a downward spiral in which interaction with social problems, legal and financial problems, employment and health problems takes place, which can not be easily unravelled. Before the entire picture can be comprehended, it is necessary to understand the various types of problems and the relations between them.

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CHAPTER 4.3

Screening for psychopathology in the clinical practice

Introduction

Comorbid opiate addiction and psychopathology have been the central themes in several recent scientific publications. Some authors described prevalences of the so-called 'dual diagnosis' problems (Rounsaville et al. 1982, Hendriks 1990, Regier et al. 1990, Limbeek v. et al. 1992, Abbott et al. 1994, Raskin & Miller 1993, Darke et al. 1992, Swift et al. 1990). Others discussed the causality of these problems (Lehman et al. 1989, Lehman et al. 1993, Turnbull & Roszell 1993). Hypotheses, such as the possibility that different drug use patterns result in different types of psychopathology, were investigated too (Regier et al. 1990). In these publications the psychopathology has been assessed with various instruments. One of these is the Addiction Severity Index (McLellan et al. 1980, Hendriks et al. 1989) which is used with increasing frequency in treatment programmes, scientific studies and for registration purposes. An important advantage of the ASI is the multidimensional concept of addiction problems. This makes it possible to study problems in different aspects of life, including psychiatric problems within 1 instrument. As for addicted individuals with psychiatric comorbidity for instance the ASI is capable of describing the nature and extent of drug problems as well as psychiatric problems (McLellan et al. 1983, Rounsaville et al. 1986, Stoffelmayer et al. 1989).

However, given the complex nature of the comorbid psychiatric and addiction problems (Lehman et al. 1994), there is a disadvantage to the ASI. The psychiatry section results in a dimensional measure, expressing severity which is not specific enough to describe the psychiatric problems in terms of a classification system, such as for instance categorical DSM-III-R disorders. Instruments that provide a better distinction between symptom level and disorder level on the one hand contribute to an improved insight in the problem complexity by describing types of psychopathology. But on the other hand they require considerably more interview time, which is often lacking in treatment settings and research situations. Information about the relation between the ASI psychiatry section and specific psychiatric disorders may be useful for those clinicians who are not able to conduct an elaborate psychiatric interview. Therefore the aim of this article is to describe to what extent the psychiatry section of the ASI reflects DSM-III-R disorders, assessed with the Composite International Diagnostic Interview (Robins et al. 1989). An earlier study of Hendriks (1990) showed that compared with the psychiatric symptom check list SCL-90 (Derogatis 1983) and the Beck Depression Inventory (Beck et al. 1961) the ASI was the best screening instrument for anxiety-related disorders and depressive disorders. Among opiate-addicted individuals who participated in a residential detoxification programme, 81% of the psychopathology cases could be identified with a severity rating of 5 or higher in the psychiatry section of the ASI. In this instance, 55% of the cases without psychopathology were correctly identified.

Materials and Methods

Subjects

The central topic of this publication is part of a larger study, in which opiate-addicted individuals in and outside of treatment are compared. During a period of about 30 months in which data were gathered, 327 opiate-addicted individuals were interviewed. The respondents had been dependent on opiates for at least the past 2 years, which is in accordance with DSM-III-R criteria, and they were 18 years or older. Respondents who

stayed in the treatment setting for less than 2 weeks were excluded from the study. Subjects were acquired in 4 settings. In a low-threshold methadone programme 91 respondents were selected on consecutive admission; every third respondent was approached. In a clinical detoxification programme 72 respondents who did not continue their treatment with a TC (detox only) and 77 who did continue their treatment in a therapeutic community were interviewed. All subjects who were in treatment signed a form of consent. Interviews were conducted by trained staff of the treatment settings. There were regular meetings during which the researcher commented on the interviews. 83 opiate-addicted individuals without treatment were interviewed. They had not received treatment for more than 2 weeks over the past 2 years. They were selected by means of the snowball sampling method with nominee selection (Hendriks et al. 1992). In this method the interviewed respondent names about 6 other heroin users without treatment contacts. Of these, 1 is randomly selected and interviewed. All subjects outside of treatment were paid for their participation. The fieldwork was carried out by the researcher and a community fieldworker, who was trained in interview techniques. The non-response numbers in the different settings were: outside of treatment: 22% of the users identified by the chain referral method could not be located or refused to participate and 9% of the approached users did not show up at the second or third appointment. Methadone: 26% of the approached users refused participation or did not show up. Inpatient: 9% of the respondents left the setting before the required 2 weeks and therefore no CIDI interview was recorded. ASI interviews of 11% of the inpatient heroin users could not be retrieved by the treatment setting. The socio-demographic characteristics of the lost respondents in the treatment settings did not differ from those of the interviewed users.

Procedure

Two instruments were used. The Dutch version of the Addiction Severity Index (ASI^R) (McLellan et al. 1980, Hendriks et al. 1989) was used to collect information on several life aspects. These are physical health, employment, alcohol and drug use, legal status, social functioning and psychiatric problems. Both lifetime and current problems are addressed. For every area an overall 'severity rating' was established; this rating was chosen in a range from 0 (no problems/no need for help) to 9 (extreme problems/extreme need for help). Composite scores were also computed, based on recent items of the ASI^R (McLellan et al. 1985, Hendriks et al. 1989). These composite scores are considered to be more objective than the severity ratings, because the interviewer's opinion does not play a role. The Composite International Diagnostic Interview (CIDI) (Robins et al. 1989) was administered to describe the respondents' psychopathology in terms of DSM-III-R disorders. The disorders were grouped into 3 categories that were previously used by other researchers (Rounsaville et al. 1982, v. Limbeek et al. 1992, Hendriks 1990). Recent disorders only (last 6 months) are presented. Major depression, dysthymia and manic disorder were united in the category 'affective disorders'. Generalized anxiety, obsessive compulsive disorder, agoraphobia and panic disorder together constituted the category 'anxiety disorders'. Social and simple phobias were left out because too many respondents were classified in the anxiety category due to only one of these, relatively very light, phobias. The third category was antisocial personality disorder (ASP). Lifetime schizophrenic disorders make up the fourth category.

Data analysis

In general there are two kinds of overall measures in the ASI: severity ratings and composite scores. When the ASI is used as a screening instrument to identify addicted individuals with psychiatric problems, cut-off points can be used to distinguish between respondents with and without those problems. The choice of such a cut-off point is based more often on intuition than on empirical data. To find out to what extent certain psychiatric disorders were

screened, validity measures of sensitivity and specificity of the diagnoses were obtained by comparing the ASI psychiatric overall measures at several cut-off points with the criterion (CIDI). There could be four possible combinations. True-positive (TP) and true-negative (TN) classifications occur when the 2 types of data agree, false-positive (FP) and false-negative (FN) classifications occur when the 2 types of data disagree. Sensitivity refers to the percentage of persons with a disease and who are classified by the test as having the problems (TP/TP+FN). Specificity points at the percentage of persons without the disease and who where classified by the test as not having the problems (TN/FP+TN) (Bouter & v. Dongen 1991).

Results

The results will be presented in three parts. First, data are presented which concern the different levels of severity ratings of the ASI^R psychiatry section, and secondly data which concern the different levels of composite scores of the psychiatry section. Thirdly it is described to what extent the DSM-III-R disorders are screened at ASI^R item level.

Severity ratings

The results in table 1 represent the relation between the ASI^R psychiatry ratings and the CIDI diagnoses. The severity ratings were divided into 3 categories (Low, Mid and High), previously used by McLellan et al. (1983) and Hendriks (1990). It was expected that the percentage of respondents with a particular disorder would increase from the low to the middle group and from the middle to the high group. It emerged that this was true with respect to anxiety disorders and schizophrenia, but not with respect to affective disorders and ASP disorders. The number of respondents with an affective disorder in the middle group was 27.0% which was not very different from the 30.8% of the high group. For ASP disorders the number of respondents with this disorder was comparable across all 3 ASI^R categories. This reflects the different character of this Axis II (personality) disorder compared to the other Axis I disorders, which are better reflected in the severity ratings.

Table 1. Percentage of respondents with pychopathology (measured with CIDI) by ASI psychiatry rating (low, mid, high).

Recent CIDI disorders	ASI-Low rating 0-3 n=147	ASI-Mid rating 4-6 n=141	ASI-High rating 7-9 n=39
Affective disorder	9.5%	27.0%	30.8%
Anxiety disorder	23.1%	27.0%	48.7%
Schizophrenic disorders	1.4%	5.7%	13.5%
ASP disorder	26.5%	39.7%	33.3%

Table 2 describes to what extent affective, anxiety, schizophrenic disorders and ASP disorder categories (CIDI) were identified correctly at several cut-off points of the ASI^R's psychiatric severity rating. Of the 4 categories ASP disorder appeared to be identified worst. At a cut-off score of 5, 58% of the cases were well identified, while the other categories scored about 65% at this point.

Table 2. Affective disorders, anxiety disorders, schizophrenic disorders and ASP disorder (measured with CIDI) by several cut-off points on severity ratings of the ASI psychiatry section (n=327).

Cut-off points	Sensitivity	Specificity	Correctly identified cases
Affective disorders			
rating ≥ 3	86.2	39.7	49%
rating ≥ 4	76.9	51.1	50%
rating ≥ 5	60.0	67.9	66%
rating ≥ 6	40.0	79.4	66%
Anxiety disorders			
rating ≥ 3	79.2	36.9	44%
rating ≥ 4	66.0	47.4	51%
rating ≥ 5	58.5	66.1	65%
rating ≥ 6	43.4	78.8	73%
Schizophrenic disorders			
rating ≥ 3	86.6	35.2	38%
rating ≥ 4	86.6	46.8	49%
rating ≥ 5	66.7	63.5	64%
rating ≥ 6	60.0	73.5	76%
ASP disorder			
rating ≥ 3	73.1	38.4	49%
rating ≥ 4	63.9	38.4	53%
rating ≥ 5	46.3	66.4	58%
rating ≥ 6	26.9	76.8	58%

Composite scores

In order to describe the relation between the ASI^R composite scores and CIDI diagnoses, table 3 represents percentages of users across the different ASI^R categories with a low, middle or high composite score. The 3 categories of composite scores have been formed by calculating the mean (M=0.24), plus and minus 1 standard deviation (SD=0.23). This procedure was used previously by McLellan et al. (1983) and Stoffelmayer et al. (1989). Because the composite scores range from 0 (no problems) to 1 (severe problems) it was expected that the high category would contain the largest number of respondents with a particular disorder. However, it appeared that the middle group consisted of the largest number of respondents who suffered from recent disorders in all 4 categories. This might be a result of the composite score being based on only the recent items of the ASI^R, whereas the severity rating includes past (lifetime) psychiatric symptoms as well. Indeed, further analyses showed that the lifetime average number of DSM-III-R disorders was significantly larger in the high group (2.83) compared to the middle group (2.18) and the low group (1.33) (p=0.00). This indicates that long-term psychiatric information plays an important role in the assessment of the psychiatric severity of psychiatric problems with the ASI^R.

Table 3. Percentage of respondents with psychopathology (CIDI) by category of ASI composite score (low, mid, high).

Recent CIDI disorders	Low score 0-0.01 n=111	Mid score 0.01-0.47 n=154	High score ≥0.47 n=59
Affective disorder	12.9%	50.0%	37.1%
Anxiety disorder	13.5%	46.2%	40.4%
Schizophrenic disorders	13.3%	66.7%	20.0%
ASP disorder	20.0%	62.9%	17.5%

Table 4 represents the results of screening CIDI disorders at 3 cut-off points. When the data were cut off above the mean, respondents with affective disorders were identified best of all (64.3%), followed by ASP disorder (60.1%), anxiety disorders (58.1%) and lifetime schizophrenic disorders (54.7%). However, these percentages show that there are no major differences between the various disorders.

Table 4. Affective disorders, anxiety disorders, schizophrenic disorders and ASP disorder by 3 cut-off points on composite scores (n=327).

Cut-off points	Sensitivity	Specificity	Correctly identified cases
Affective disorders			
low (≥ 0.01)	87.1	39.6	48.8%
mid (≥ 0.24)	74.2	61.9	64.3%
high (≥ 0.47)	38.7	86.9	77.6%
Anxiety disorders			
low (≥ 0.01)	86.5	38.5	46.3%
mid (≥ 0.24)	59.6	57.8	58.1%
high (≥ 0.47)	40.4	86.3	78.9%
Schizophrenic disorders			
low (≥ 0.01)	86.7	35.5	37.9%
mid (≥ 0.24)	46.7	55.0	54.7%
high (≥ 0.47)	20.0	82.1	79.2%
ASP disorder			
low (≥ 0.01)	80.0	42.9	55.2%
mid (≥ 0.24)	58.1	61.9	60.1%
high (≥ 0.47)	18.1	82.9	61.3%

Finally, some comparisons were made at item level of the ASI^R. Of the respondents with a lifetime major depression or dysthymia (n=95) 81.3% was screened by the ASI^R question if they had ever been depressed, while 47.2% of respondents without the disorder were correctly classified. Of the respondents with a recent depressive disorder on the CIDI (n=61), 57.4% was identified by the ASI^R question if they had been depressed in the past month, whereas 71.6% without depressive disorders scored negatively at the ASI^R

depression question. Of the lifetime anxiety disorders (n=181), 65.7% of respondents were correctly identified by the ASI^R, and 58.1% of respondents without the disorder were screened correctly. The ASI^R recognized 46.3% of respondents with recent anxiety disorders (n=123) and 74.3% of respondents without recent anxiety disorders.

Conclusion and discussion

A limitation of this study is that the CIDI diagnoses, which are used as the 'golden standard' in this comparison, are also assessments with a better or worse sensitivity and specificity. A comparison with for instance clinically assessed disorders might give an indication of the quality of the CIDI results, but even these clinically assessed disorders are not watertight. For instance Kranzler et al .(1995) compared the validity of psychiatric diagnoses that were obtained by a clinical interview (SCID) conducted by a Master's level clinician with the validity of diagnoses that were the result of a non-clinician conducting a standardized interview. They concluded that the psychiatric diagnosis in substance abuse patients may be improved by the addition of elements of structured interviews to the clinician's usual assessment. For the CIDI several publications showed good validity of almost all diagnoses except for psychotic disorder (Semler 1989, Sprengler & Wittchen 1989, Janca et al. 1992, Farmer et al. 1987).

Furthermore, the reliability of the results in this study might be limited because data are based on retrospective self-reports of the respondents who were often under the influence of drugs. During the fieldwork respondents suffering of heavy withdrawal symptoms or strong intoxication were not interviewed, but in those cases the appointment was rearranged for another time. We expect the chances of deliberately falsified answers to be small, because there were no financial or other consequences attached to the answers.

The present results indicate that the ASI^R psychiatry section detects part of the psychopathology cases, but also misses out a substantial number. For instance at item level, 18.7% of respondents with lifetime depression were missed out and 34.3% of respondents with lifetime anxiety disorders. Also at the severity rating level about 35% of respondents with anxiety, affective or schizophrenic disorders were missed out at a cut-off level of 5. The detection of ASP disorder was worse. The number of respondents in the group with middle severity ratings (4-6) that reported ASP disorder was larger than in the high group (7-9). At the various cut-off levels the percentage of correctly identified cases with respect to ASP disorder also remained low. This indicates that Axis II personality disorders such as ASP are of a different nature when compared to the Axis I disorders.

One reason for these differences between the instruments is that in a structured psychiatric interview all DSM-III(-R) symptoms of a disorder are investigated, which results in categorical diagnoses at disorder level. For each symptom it is checked whether it is severe enough, whether it results from a physical illness or from substance use. Whereas the ASI^R psychiatry section measures more at symptom level. It is less extensive and it integrates the information about different types of psychiatric symptoms into a dimensional measure to indicate the severity of the psychiatric problems, regardless of the type of psychopathology. The latter screens only part of the psychopathology cases. Another explanation for the differences that were found between the instruments could be the conclusion of Raskin & Miller (1993) that psychiatric symptoms which are common in active addiction are mainly symptoms which generally disappear within weeks or months of treatment for addiction. Because the CIDI results are described at disorder level, many symptoms might not pass this threshold of the disorder level while these are screened by the ASI^R.

A comparison of the sensitivity and specificity of the ASI^R psychiatry severity rating and the psychiatric composite score shows that the severity rating approaches the recent CIDI diagnoses better than the composite scores. When the scores were compared across 3

groups (low, mid, high) it turned out that not the highest group but the middle group consisted of the largest number of respondents with psychiatric disorders. This indicates that the inclusion of lifetime items of the ASI^R psychiatry scale, as is the case with severity ratings, improves comparability with the CIDI results.

What is the best cut-off point to screen a particular type of psychopathology depends on several factors. Factors such as the nature of the disease, the available money and the consequences for the people undergoing the test all play a part. For example a high sensitivity is required with regard to diseases that would deteriorate without treatment, but that can be successfully treated if they are detected in time. A sensitive test is also useful in order to eliminate people without diseases at the start of the diagnostic process. A negative consequence of choosing a high sensitivity is that persons are sometimes labelled as psychiatric (false positives) without reason. This may lead to emotional damage or medical overconsumption. (Bouter & van Dongen 1991). The current study considers mental disorders. The negative effect of severe psychiatric comorbidity on the prognosis for treatment (McLellan et al. 1983, Rounsaville et al. 1987) underlines the importance of thoroughly screening these disorders. Therefore a cut-off point with high sensitivity seems most appropriate. Yet another reason for choosing a high sensitivity is that the nature of the psychopathology in opiate-addicted individuals might not be apparent at first sight. When screening takes place at the moment of intake the chances are that psychological symptoms dissolve during the first weeks of treatment. Therefore it seems more appropriate to choose for a large number of false positives in order to end up with the true psychiatric disorders.

Implications of the results are that the ASI^R psychiatry section should only be used very carefully for assessment of psychopathology in opiate-addicted individuals. Because of the low agreement between ASI^R data and DSM-III-R disorders we advice to use the ASI^R psychiatry section for the first step in a screening process only. The next step would be a clinician's opinion or a more extensive instrument to assess psychopathology. Unfortunatley both take extra time, which might not be available. If this is the case a relatively low cut-off point, say 4, should be used in order not to miss out too many addicted individuals with a disorder. The consequence of this method is that the extra number of false positives that are necessary to find the number of true positives requires additional financial resources. Also, with respect to the rather large number of false positives, especially those in treatment, it is important not to label the client as 'psychiatric' based on ASI^R information alone.

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5. Processes of addiction and help-seeking behaviour

The former sections presented results that were measured with standardized instruments. The chapters in this section focus on how respondents experience the problems and if and how they use control strategies (such as help-seeking behaviour) to prevent negative side-effects. To this end qualitative data are analysed (n=48). In chapter 5.1 it is described if respondents experience their opiate addiction as a downward spiral and to what extent they describe themselves as able to employ controlling behaviour. Analogous with the ASI^R data, different life areas are used to structure the stories about different types of problems. Chapter 5.2 presents different factors (from existing literature) that might influence help-seeking behaviour in opiate addicts. A model is formed on the basis of these factors. The three types of data (ASI^R, CIDI and qualitative interview) were combined at individual level (n=42) and exploratory analyses were performed to determine the value of the factors in the model. It appeared that negative opinions about treatment settings are an important barrier for opiate addicts to seek help. Chapter 5.3 therefore presents respondents' views on the methadone programme, and highlights their difficulties with respect to this programme.

The chapters of this section are based on the following papers and manuscripts:

* M.A. Eland-Goossensen, T. Hak & E.C. Vollemans. Heroin addiction careers: downward spiral or controlled descent? Contemporary Drug Problems, in press.

* M.A. Eland-Goossensen, L.A.M. van de Goor & H.F.L. Garretsen. Factors that influence help-seeking behaviour of opiate addicts. Submitted.

* M.A. Eland-Goossensen, L.A.M. van de Goor & H.F.L. Garretsen. Meningen van heroïnegebruikers over methadonverstrekking in Nederland. (Methadone supply in The Hague: clients' views). Accepted for publication in Tijdschrift voor Alcohol, Drugs en andere Psychotrope Stoffen.

CHAPTER 5.1

Heroin Addiction Careers: Downward Spiral or Controlled Descent?

For the public and for most policy makers there is no doubt that the career of heroin addiction necessarily involves gradually losing everything one has: health, income, a home, a stable network of relatives and friends and, last but not least, any sense of self as a moral agent. Although this view is factually incorrect as far as there are examples of controlled heroin use without such negative effects (cf. Zinberg 1984), the image of the addiction career as a necessarily downward spiral is represented in the literature as well. The clearest example is the medical model of addiction in which the addiction career is described as a process of inevitable social deterioration: the drug addict becomes more and more involved in deviant and illegal behaviour. The addiction career can be terminated only by therapy or death. Other literature, however, describes the course of addiction as a process of "maturing out" (Prins 1995). This is a process in which a considerable number of the addicts are able to kick the habit by themselves, step by step (Winick 1962). The latter implies that addicts are able to control their career to a certain extent. The two approaches can be represented by different metaphors: *downward spiral* and *controlled descent*.

This article, which is based on 48 interviews, discusses how heroin addicts portray their careers and the extent in which they control the downward process. It is supposed that information of this kind will enhance our knowledge of addicts' methods of controlling their situation, which can be relevant for policy and therapy. Our main question, thus, is whether addicts portray themselves as victims of forces beyond their control or, at least partially, as capable of regulating their situation.

Methods

In the frame of a more extensive study of differences between heroin addicts in and outside of treatment settings in the city of The Hague (The Netherlands), interviews were conducted with 48 addicts who had been using heroin regularly (three days a week or more) for at least two years. Among the repondents were 8 women. The sample consisted of 21 heroin addicts who had not been in contact with drug treatment agencies for at least two years, 5 clients of a outpatient methadone programme, 11 participants in a clinical detoxification center and 11 addicts staying in a drugfree therapeutic community. The 21 non-treatment respondents were selected by a snowball sampling method (see Eland-Goossensen et al. in press). The treatment group were interviewed between two and four weeks after admission.

Respondents were invited to tell about how heroin use was embedded in their lives. Furthermore experiences with treatment and, if relevant, reasons for rejecting and quitting treatment were explored. In the interviews we used a topic list corresponding to the life areas that are distinguished in the Addiction Severity Index (McLellan et al. 1981, Hendriks et al. 1993) which include: chemical abuse, medical, psychological, legal, family/social, employment/support. Housing was added as a topic. Obviously, in the respondents' stories the different life areas were not so clearly separated. Interviews took approximately one hour each, and were audiotaped. The interviews were transcribed.

Results are presented in three sections. First we discuss to what extent respondents portray their careers as dominated by forces beyond their control. Although sometimes is mentioned how many of the respondents reported a specific loss, these numbers may not be generalized. The sample contains as many as possible different opiate addicts, and is certainly not representative to the population. Next we present data on respondents' descriptions of controlling behaviours. Finally we show how personal values are related to control and, consequently, are of influence on the addiction career.

Downward spiral

In response to the request to tell about how heroin use was embedded in their lives, all respondents spontaneously described aspects of their careers as (part of) a downward spiral. Take, e.g., the following extract from the interview with a respondent in the detox group.

> [man, age 28, detox] I: Our first question is ... What has been the meaning of heroin use in your life, what has been its influence? R: In order to suppress my feelings, difficulties. It is terrible, being hooked, for I never got a kick out of it. I just landed up in it. [part omitted] I: What happened just before asking help? R: I knew it got worse and worse, you know, I mean I was just sliding down. It gets worse. I had no house anymore, I lost everything, I lived on the street, you know, my life was a misery. I used to live on my own, I had beautiful houses. I lost my friends, my relatives, I turned my back on them. I thought I must stop this, it is going too far.

This is a clear description of a downward spiral. The addict's course of life is experienced as an inescapable 'sliding down' to a situation in which one 'just lands up'. Many life areas are involved in this process, such as social contacts, family life, and housing in particular. Another example is presented by the following respondent.

> [man, age 30, detox] R: In the beginning I could handle the situation, I had a very good job, I was manager of a sandwich bar, I had a good salary, and so on. First I have eaten up this business. My relationship deteriorated, she left me. I stayed in the apartment, but I started dealing drugs and I didn't pay the rent. I sold the furniture and in the end there was nothing left. I went really really low. Then I had nothing left and was removed from the flat ... I lost really everything. [part omitted] R: I was really back in the cellar, though I had been at the top with having that house, spending my holidays in Morocco and having completed school. But now I am back in the cellar. I have to climb up again.

Respondents differ in terms of how they describe the process of sliding down. There are differences as well regarding the life areas that are involved in this process and, therefore, regarding the lowest point that is reached. This is illustrated in the following by presenting quotations from the interviews regarding different life areas.

Housing

In the fragments presented above the loss of one's home was prominent. 21 of the interviewed addicts were homeless at the moment of the interview or had been homeless at another moment in their heroin careers. Due to the heroin use bills may not be paid, including electricity, water, gas or rent. Sometimes neighbors complain about nuisance. These factors may result in being forced to leave the house.

> [woman, age 39, non-treatment] R: For heaven's sake how could things go so far? I had everything I wanted, I earned money. Although I was alone with my children, it went very well. And then at a certain moment more and more people came in my house, and you cannot control it when you fall asleep. There is always someone around who opens the door for another, and once they are in they do not go anymore, it became full. [part omitted] R: Then I was evicted from my home. I received a letter, and I had the money but it was too late. I could not undo it. I didn't know what had happened, but it appeared that neighbors had complained. I didn't know because I was working whole days. And the eviction came.

Another reason for losing one's home can be that relatives or the partner force the heroin user to leave, as a result of quarrels. In most cases, losing one's home means also losing one's possessions. In those cases users must turn to relatives, friends and acquaintances for housing. However, relations with relatives and friends will become stressed as well.

Family/social

In the area of social relations the downward spiral is characterized by an estrangement from former friends, resulting in isolation. 24 of the 48 respondents mentioned that they had lost their friends that did not use drugs. Often money is considered more important than friendship:

> [man, age 29, non-treatment] R: And the friends in the drug subculture, one cannot call them friends. They betray you all the time. I: Did you have friends before you started using dope? R: At that time I had very good friends, indeed. We did a lot together. Due to my dope use these friendships got neglected. People find out, and you start fooling them. I neglected them and since that time I have no good friends no more. I: So that estrangement was caused by the dope? R: Because of the dope, when being with other persons, one is constantly watching out for money. What can I remove here, what there? And at a certain moment one starts manipulating them. And when they figure out, then it is over. That is how I lost many friends.

For almost all addicts it is this change of interest -- from an interest in the person to dope and money for dope -- which thwarts the ability to have satisfying social relationships. Contacts with non-using friends are replaced by contacts with other heroin users. Friendships in the drug subculture are not equal to relations with non-users ("one cannot call them friends"). They are more oriented to money and material advantage.

A similar process of estrangement may occur with respect to family members, though the ties are often stronger. When the relation with the family is good, it can be a source of accommodation, meals, hygiene and money. Although several respondents reported being cared for by their mother during a large part of their addiction career, family contacts worsened as a result of lying about drug use, spending less time with the family and manipulating behaviour with the aim of getting money. 22 of the 48 respondents reported this kind of problems. Respondents told of arguments with parents, and even physical abuse of their mother. On the one hand taking away valuable objects, cheques or jewelry, was for several respondents a reason to stay away from home because they felt ashamed. On the other hand, a few respondents reported that relatives initiated severing contact. In some cases relatives searched for the addict in the drug scene when the latter had broken all contact with the family:

> [man, age 35, therapeutic community] R: Finally things were going so bad, you know, that my mother even searched for me. She wanted to know whether I was still alive. My brother searched for me several times and found out that I was sleeping in a squat, with ten blankets or five coats or whatever.

Similarly, the relationship with the partner may suffer from the addict's lying, manipulating, indifference, 'borrowing' of money, and from the disappearance of sexual desire. 31 of the 48 interviewed addicts broke up with their partner because of drug abuse. Aggression as a result of cocaine use was reported as well:

> [man, age 36, non-treatment] I: Did you become aggressive because of the coke? R: Yes one becomes a different person by using coke. For instance, first I could live together with my girlfriend, but later I began battering her. I was using, say, 10 to 15 grams of coke, and I could not avoid beating her. So I was thrown out. That is four years ago now, but it still bothers me.

10 out of the 48 respondents had no contact with their children anymore, while some were even deprived of their parental rights:

> [man, age unknown, methadone] I: How did your heroin use affect your relationship with your family? R: Yes, it spoiled the atmosphere totally. My children were removed because I did not pay attention anymore, because of my drug use. That is why they were taken away, but I always had enough food for them, they had no shortage of that.

Some made an arrangement with relatives with the effect that, e.g., a sister took care of the children. Others lost all contact and, voluntarily or involuntarily, relinquished their right to visit their children:

> [man, age 41, non-treatment] R: I have two children with another girlfriend. A twin, I love them. Two girls, 16 year old, so beautiful. I: Do you still see them? R: No I watch them with my binoculars, in secret. They live in another city, with their mother.

Losing contact with one's children is the most painful of all losses. The desire to establish contact with her children again is the only remaining wish of the following respondent, a sorrowful, unkempt woman in a filthy, empty house of which the door could not even be locked.

> [woman, age 34, non-treatment] I: Did you ever want to kick the habit? R: Yes for my children. I would like to quite at once, you know, for my children. I love my children very much.

Most respondents, however, do not report a decrease of substance abuse but rather an increase.

Chemical abuse

Fifteen respondents describe how starting to inject the drugs or the use of cocaine, certainly when it is boiled and used in a base pipe, led to loss of control. An extreme form is loss of consciousness.

> [woman, age 37, therapeutic community] R: Before applying for treatment I was completely out of control because of cocaine. I was entirely tired because of using. [part omitted] R: I never forget ... The other day I awoke on the floor with a bump on my head. I had not noticed it at all. Another time I found myself lying in the bathroom. Totally unconsciousness.

A clear signal of losing control on drug use is when a user does not decide for himself anymore the amount of use, but when the available money is limiting how much will be used.

> [man, age 29, non-treatment] R: Money influences the amount of use. If you have more money, you use more.

Few users are able to avoid this situation. Usually they will need more dope and, therefore, more money.

Legal

Sooner or later almost all users experience a shortage of money. Different solutions are found, among them the manipulation of relatives and acquaintances, and criminal activities. 34 out of the 48 respondents mentioned the following activities: forging cheques, shoplifting, stealing car radios or cars, burglary, drug trafficking, and bank robbery. Many respondents described the experience of the need to shift to more and more serious crime. This is illustrated by the following fragment from a user who can be considered a hard core addict:

> [man, age 29, non-treatment] I: And, for instance, getting money for dope ... perhaps this brought you in contact with the police. That will influence your life as well. R: Sure, it had a lot of influence, I was long periods in jail for several times. One becomes more violent. Little things do not help enough and then you start to do more serious things. One begins organizing something such as robbing a bank. Things will get out of hand. And if one gets caught for that, one gets a long term jail sentence. That happened to me once.

However, the escalation described by this respondent does not apply to all. Another respondent, for instance, described losing control within only one type of criminal activity, stealing car radios.

> [man, age 30, detox] I: Can you tell more about how you financed your habit, and how that developed? R: In the beginning I used to swindle my grandma, who had quite a lot of money, for thousands of guilders. That went on for quite a long time, about two years. I had not yet lost my job at that time. Where I worked, there was always money around, in the cash register. It was there for the taking. But later, it couldn't go on. My grandma is no tree, that you can keep on shaking. I began to realize that. Yes, I used to do criminal things. But I was not one of those guys who open cars very easily. But then a boy came to stay with me, and he could drive cars away or open cars very quickly. So that's what I have done also, not burglary or those kind of things, though I have done it a few times, but predominantly stealing car radios. You learn something from the guy. In the beginning one just watches, but later one does it oneself. In the beginning one has fear, but one needs money and becomes bolder and bolder. One starts with cars on street corners in the dark. One ends not caring anymore, taking them just across from the police office, or with people around it. You become even more bold. That boldness has killed me. In the last year when I started using again, I stole car radios again. And at a certain moment a guy caught me and then it ended in a bad way, because I stabbed him with a screwdriver. That was the limit. I: Did you often use weapons? R: No, it was a reaction out of fear.

This is an example of a downward spiral within a confined domain, namely of stealing car radios. Within this domain the addict's behaviour becomes more indifferent and bold. A similar development is described in the following fragment, in the domain of burglary.

> [man, age 19, detox] I: Did you stretch your rules, for instance your principles? What about stealing from an old lady? R: In the beginning it were always gambling machines, in clubs and chapter houses and the like. Later it became distant snack bars. But at a certain moment I had burgled almost every distant place. And one needs money. So I took the snack bar across from the main police office in The Hague. Hop inside and then immediately run away. Then I began to take many risks, breaking windows in crowded shopping streets, hup, with a lot of noise. I didn't care. In the beginning I was almost never at the police station, but that increased because I took more risks. I was hiding ever shorter periods after a burglary. And I did housebreaking by day, I didn't want to go out at night anymore. The next day one wakes up again, sick again, and one needs money, so one goes again.

Common to these stories is that an ever increasing need for money results in an escalation in terms of seriousness of crime.

Psychological and Medical

Eleven respondents viewed themselves as having serious mental problems. As a result of heroin use a process of alienation took place in many respondents. Feelings are suppressed under the influence of heroin. Some illegal drugs arouse psychopathological symptoms, for instance the cocaine use may lead to uncontrolled aggression, persecution complexes or depression. When psychological problems occur it is not always clear if they are a result of the drug use itself, or of the changed living conditions. Sometimes the psychopathological symptoms appeared before the illegal drug use.

In terms of health, first the conditions for maintaining health, such as nutritious food and hygiene, are often neglected because of the fixation on heroin. Neglecting food may also be caused by cocaine which is known for its appetite restricting influence.

> [man, age 28, non-treatment] I: What about your health and your eating habits? Do you care or do you neglect it? R: In the beginning it was okay, when I lived with my father, when I used heroin in secret. At that time I didn't change my eating habits. But when I started using coke, I couldn't eat anymore. I remember that my father said to me: "You don't eat much recently. You only eat light things like custard, cookies and chocolate". Then I had to make up an excuse, such as I do not like potatoes anymore or something like that. I do not have a meal anymore at, say, twelve and six o'clock like I used

> to do. I don't care anymore since I use drugs. In the past I did care. The drug use has influenced my eating habits and my clothing as well.

Second are some users indifferent to injuries or infections, when these occur. Often insufficient attention is paid, which may result in complications or a slowed recovery.

> [woman, age 37, therapeutic community] R: The other day I was pushed off some stairs, which were set on fire. And this made scratches on my legs. Look, I still have scars from it. At that moment I didn't realize, just scratches, but a week later when I wanted to walk and I couldn't stand up because of abscesses on my legs. I was two weeks in hospital, nearly a leg amputation.

When one is capable of looking clean and tidy, this may prevent sliding down in other life areas, such as employment.

Employment/support

In the beginning of their career users are often able to reduce negative influences on their work situation. In later stages, when they must use heroin daily in order to function well, the financing of the habit may become a problem, since time is needed for getting money. 31 of the 48 respondents report losing their job because of, e.g., coming late in the morning, or because of stealing from their employer. An example:

> [man, age 35, therapeutic community] I: How did you find that job, just by applying? R: Yes, simply by applying. I always took care that I looked well. Later I could not do that anymore, but in the first six years of my drug use I could still present myself properly. They could not see that I was a junkie. So I got that job. But I was often too stoned, which they could see in me. And I stole money from the cash register, which they knew, though they did not tell me. But then they said: "We take someone else for you" or whatever excuse they used. They said that I had been substituting for someone who came back to work.

Summarizing this section it can be concluded that these heroin addicts perceive their career as a downward spiral which is characterized by a loss of control in different areas of life. This could be documented by examples in which respondents describe the downward movement in specific areas. 44 of the 48 respondents reported problems in four or more of the above presented life areas. It cannot be concluded, however, that this process has the same character and the same pace for each respondent in each life area, nor that respondents only provide examples of descent. We will now focus on a very different kind of talking about the downward process by presenting fragments in which respondents talk about periods of being in a more or less stable situation, at least temporarily, or even describe stages of an upward movement.

Controlled descent

The metaphor of the downward spiral fits the process of heroin addiction as illustrated in the previous section. There are, however, fragments in the interviews that do not fit this picture. First descriptions of climbing upwards after having 'hit the bottom' were given. The following respondent, an older user who had been in a really bad situation, had climbed up to a more controlled situation after he had decided to nurse his father, an Alzheimer patient. During this period he used drugs in a very controlled way. Looking back at the time before he tells:

> [man, age 42, methadone] R: I used to be like most junkies, I was lying, cheating, stealing and robbing and I sold everything I had, the craziest things. If I would have had the possibility to sell the toilet seat, I would have done it. When I think about it now, I feel deeply ashamed, but it happened.

He could leave this state of affairs and stay in a stable 'higher' situation because of the fact that he could not leave his father for longer stretches of time. Another example of a more or

less stable situation in which a downward movement was be halted was given by a respondent who had been working as a sailor on transatlantic cargo ships. During the long journeys on the boat he was forced to become and stay clean each time. Although he started using dope again as soon as he was on leave, he was always able to stop when a new trip began. This equilibrium was disturbed when he was forced to stop working because of an injury:

> [man, age 38, methadone] R: When I had sick pay because of my leg and fingers, I could not join my friends on the ship anymore. I started to see the boys who used heroin and I joined them. Then I started smoking as well. I have never again worked on a ship.

Although this respondent did not work on a ship again, he is clear in stating that working on the ship would help him to control his habit. Another frequently mentioned way of stopping the downward movement is asking professional help. An example:

> [man, age unknown, detox] R: Then I came to the detoxification center. I restored in nearly six months what I had destroyed in all those previous years. I got friends again, I saw my parents again, the relationship with my girlfriend got better. My mother started to trust me again, my other relatives also a little bit. I was able again to live together with my girlfriend. I had furniture again. I could rebuild everything.

Another respondent who had lived on the street from a very young age on, described how the army had provided structure for his life and compliments regarding his behaviour, which he had missed in his youth.

> [man, age 28, detox] R: At age eighteen I went in the army. I did very well, used no dope, did not drink, nothing. When I left the army, there was that big empty space again, in which I fell. And I started using three times as much as previously. If I got the chance to return to the army again, I would do it.

Some respondents mentioned examples of specific controlling behaviours concerning drug use and criminal activities. A frequently mentioned example was saving some dope for suppressing dope-illness in the morning. The following respondent tried to control his heroin use all day long.

> [man, age 30, detox] R: For a few years now I really try to control myself. I smoke only little amounts at a time. I try to become disciplined. I try to save it for when I become dope-ill, try to use it only when I really need it.

Forms of control can also be found regarding social relationships. Some users visit relatives and friends only when they are sober. Others avoid dope-using friends and thereby using (more) dope. Most users have a sense of need for control, but the aims of their controlling behaviours differ widely. Some users talk about becoming clean again and others are satisfied when they have a house or a room to live in. Most respondents know how negative effects of their use could be managed or even controlled, but many are not able to realize this in their behaviour.

Because the interviews were not focussed on gathering detailed information about controlling behaviour, we do not know exactly which controlling strategies are applied by heroin addicts in practice. By asking respondents to describe the way their heroin use is embedded in their lives, we incidentally gathered information about how they present themselves in terms of knowledge about controlling behaviour and of trying to act according to this knowledge. Some examples were given, for instance saving dope for the next morning. But no detailed information was gathered. Such information may provide important practical information on which therapists and outreach workers base their approaches.

The examples in this section do not fit the model of a downward spiral in which addicts are pulled downwards by forces beyond their control. They rather fit the model of controlled descent in which they are, at least partially, capable of regulating their situation. We have described some examples of being in control, such as returning to the parental home in order to care for an ill father, or entering the army, or being a sailor on transatlantic journeys. There is, however, another factor that we have not mentioned in the above, which we will introduce here with the following example:

> [man, age 43, non-treatment] R: I can control my drug use. I: What do you mean by control? R: I do no crazy things for dope. I am not going to burgle for instance or rob people. I would never do such things just for getting heroin. If I cannot work and I have no money for dope, that's it. Maybe it is laziness, but I do not run everywhere to ask on my knees for a little bit of dope. I do not do these things.

What is clear from this fragment is that certain personal values can play a role. In this case, the respondent exhibits a kind of pride which effectively prevents him from 'running everywhere to ask on his knees for a little bit of dope'. In this fragment one can identify a clear sense of morality as well, which is quite incompatible with the model of the downward spin in which the addict is supposed to lose any sense of self as a moral agent.

Addicts as moral agents

Although it was not our initial intention to focus on moral values, they were so prominent in the interviews that we could not ignore them. Moral values showed up in two ways. *First* they appeared as an area in which the process of uncontrollable sliding down took place. An example:

> [man, age unknown, detox] R: The influence of drug use on my life? Both positive and negative. What I experienced as positive is that I dared a lot more because of drugs. I did things that I wouldn't do so easily otherwise. Negative sides of my drug use are that certain limits were overstepped, for instance regarding criminality. I am no criminal. Normally I wouldn't think about doing the nasty tricks that I have done. But due to hard drugs I overstepped my limits so far that I did things of which I think now: How could I ever do that?

Another example is the following:

> [man, age unknown, methadone] I: So you overstepped your limits in the area of criminal activities as a result of drug use? R: Yes, I do not think that I really am that way, but I was caught several times, was in jail several times. I do believe that drugs can make you overstep your limits. I am convinced of that. You start doing things that you would never do. Even dangerous things.

At the end of such a process of blurring of moral principles, users may arrive at a state of psychological numbness in which indifference to all values is described:

> [man, age 29, non-treatment] I: But you are able to control? R: Sometimes, only some moments. It is very strong in me that if I suffer misfortune, I sink away and nothing interests me anymore. I just sit and smoke. So deep one can go, without values and norms.

> [woman, age 18, therapeutic community] I: What did you do in order not to slide down? R: Well actually nothing, It did not interest me, I didn't care. I: You didn't care that you were sliding down? R: No, not really, the deeper I went the better it was. I: Yes? Why? R: Well I keep on asking myself. I do not understand. That is why I had to see those psychiatrists and so on.

Several other respondents stated that their overstepping of moral limits was related to the boldness induced by heroin use. This boldness may contribute to a continuously stretching of rules that can be considered a downward moral career.

Second, moral values are a constant background, a criterion against which the downward career is described. The respondents refer to this criterion only implicitly, by expressing feelings of guilt and shame. In the interviews often a tension was expressed between actual behaviour (e.g. criminal activity) and moral values. An example is the following respondent who reported tension because of a conflict between his actual behaviour and his religious values.

> [male, age 28, non-treatment] R: It influenced everything, food, my clothes. I: And what about your religious life? R: I was born and raised as a Moslem, which I will stay forever. But I know what the Koran means and I know what I do now. I actually got lost from religion. I ended up at a side track. I ran away from the belief, because for instance the Bible says also: thou shall not steal. But I do steal. And thou shall not drink alcohol, which is forbidden. Okay, I drink little alcohol, I can't combine it with drugs, but sometimes I do drink. Which is not allowed by the Koran. And one must pray, which I don't do. One has to wash oneself five times a day and pray. I take a shower every day, but washing and praying five times a day, that I don't. And everything as a result of heroin. I: Does this bring you in conflict with yourself? R: Yes sure, sometimes I think eh, why don't I pray five times a day? Why don't I wash myself? It is healthy and clean if you wash yourself five times a day, but I don't do it. Then I start feeling dissatisfied. I get angry at myself, and I think: why?

Several strategies were reported to cope with this tension between values and actual behaviour, and restore the psychological equilibrium:
a) quitting the morally rejected behaviour,
b) using more drugs in order not to feel the tension, or
c) accommodating the values downwards to the level of the actual behaviour.
All the three cases will be illustrated.

a) quitting the behaviour. Some heroin users realize that their behaviour contradicts their values and are able to quit the behaviour:

> [man, age 29 non-treatment] R: I have been smoking drugs for a long time, and then I started injecting now and then, very rarely. Well, and there was one period in which I became hooked to the injecting itself. When I realized that, I thought never again. I: You quit injecting? R:Yes.

b) using more drugs. The next respondent is not able to quit his behaviour of accepting that his girlfriend works as a prostitute, nor wants to adjust his values. He suppresses the negative tension by using more drugs:

> [man, age 28, detox] R: What really hurt me had to do with my girlfriend who worked as a prostitute before I met her. When we were together for a while she started doing prostitution work again. I blamed myself for it, and her too. We both were very wrong in that. That was for me the most important limit that I overstepped in my life, emotionally. I could have stopped her doing it. It was not a dope relation, as one often hears about it, I still love her very much. And I loved her then very much. The idea of her doing that work demanded a lot of energy and emotions, which I suppressed by using heroin.

c) accommodating values. Many heroin users are not able to quit the morally rejected behaviour and therefore adjust their values in order to balance the situation, at a lower level on the downward spiral. For many addicts such repeated adjustments of values result in another experience of 'self'.

> [woman, age 37, therapeutic community] I: Have we forgotten anything about the influence of drugs on your life? R: Well the influence of drugs on my life was that I became a real bastard. So inhumane that people feared me.

This self has to cope with many 'failures' in terms of personal and societal moral values. The changed self concept is difficult to reverse, which is illustrated by a user who experienced a confrontation with his 'old self' after becoming drug free:

> [man, age 42, methadone] R: What has been pushed away for twenty years, comes to the fore again as a bang, when one becomes drug free. I have never been so overwhelmed as at that time. Many times I could not endure it, I locked myself in, I couldn't handle it. I: Did you lock yourself in your house? R: Yes, I really couldn't handle it, becoming drug free. It was such a horrible mirror for me, having to cope with my true self. I couldn't handle it, I locked myself in for several days until I was okay again. It's an enormous task, you have to learn to handle yourself again, to accept yourself again, and many times people don't remember how they were. At least I didn't.

The feelings of guilt and shame which were recognizable in a number of respondents' stories reflect the presence of central values of society in heroin addicts. Addicts are not the amoral persons that they often are believed to be. They have moral values, but are not able to behave according to them.

Discussion

In this study we have collected data on how heroin users talk about their past, present, and future lives through in-depth interviews with 48 heroin users in The Hague (The Netherlands). They were not randomly selected. Half of them had no treatment contacts which means that these respondents have probably a longer drug use career and more serious problems compared to the average heroin user. Our main question was whether heroin addicts portray themselves as victims of forces beyond their control (downward spiral) or at least partially, as persons capable of regulating their situation (controlled descent). They do both.

On the one hand, respondents report negative effects of heroin use which are beyond their control. They describe various kinds of material, social and emotional loss resulting from uncontrollable conditions. The image of a *downward spiral* is a very appropriate metaphor for this experience. Respondents differ, however, in terms of the life areas in which the process of sliding down manifests itself. For some respondents the downward spiral is confined to the legal domain (criminal behaviour) whereas others mention family relations or housing as the main areas in which they have experienced a process of sliding down.

On the other hand, respondents speak about different types of regulating behaviours for which the image of *controlled descent* is an appropriate metaphor. This regulation can be aimed at preventing destructive behaviour, or at restoring a 'lost balance' by quitting behaviour that is recognized as negative, or at kicking the habit completely. Although *moral values* were not a central theme in our initial analysis, we found that they are an important factor in understanding the mechanism of self-control. We found that many of our respondents express their adherence to general societal norms and exhibit feelings of shame and guilt in talking about their violations of such norms. The fact that heroin users often do not act accordingly to these norms does not imply that they lack ethical integrity, but rather points to their inability to bring their behaviour into accordance with their principles. The tension that originates from this discrepancy between accepted moral values and actual behaviour can trigger forms of self-control. These findings support Faupel's (1987) view that

> *[t]he failure of heroin addicts consistently to maintain ethical integrity is commonly understood to be evidence for a lack of any normative sensitivity whatsoever. [...] Moreover as the addicts failed to maintain their ethical standards behaviourally, addicts acknowledged and asserted the legitimacy of the very norms they violated. [...] The regrets expressed, and the very necessity of offering excuses,*

> *rationalizations, and moral comparisons, all acknowledge the legitimacy of those norms that have been breached. Through these sort of statements and reactions, then, addicts honor and reaffirm their own indigenous standards of conduct, even in pointing to and acknowledging their violation on particular occasions (Faupel, 1987:415-416).*

Ethnographic studies of heroin users' subcultures (Grund 1992, Ingold 1992, Moore 1993) illuminate heroin users' behaviour and its (local) meaning but are less appropriate for discovering how heroin users evaluate their (heroin) career, different treatment options, and their chances to successfully kick the habit. However, in a study of 124 heroin users from 'inner city' ghetto's in Chicago, Philadelphia, Washington and New York, Hanson et al. (1985) describe comparable material to ours. They find ample evidence of heroin users' fear of getting caught in an uncontrollable downward spiral. One respondent describes his situation as being 'at the bottom', where selfesteem is something of the past. Similarly to our findings, some of Hanson et al.'s respondents position themselves higher on the moral ladder than others and are proud of it:

> *'I don't stick up. I don't snatch ladies' pocketbooks, man. My mother brought me up knowing better than that.' (Hanson et al. 1985:36)*

There is, however, a clear difference between Hanson et al.'s findings and ours. Whereas our respondents express shame and guilt, and hardly any pride, Hanson et al.'s respondents frequently demonstrate pride of their accomplishments. Related to this is that on the whole they feel themselves much more in control than our respondents. They proudly describe how they are continually and successfully engaged in a balancing act between the 'straight' world and the heroin using subculture. This difference between Hanson et al.'s respondents and ours can probably be explained by the very different societal positions of their respective social and ethnic groups. The position of poor black men in American ghettos is not such that they can easily feel in control over their lives. In this situation controlled heroin use is one of the few ways in which one can assert oneself. It shows that one is able to flirt with danger and still keep control. The two samples differ in the degree of addiction accordingly. Hanson et al.'s respondents seem to have slided downwards to a lesser degree than ours. An indication of this is that most of them still had a legal job.

In interpreting the way heroin users talk about 'control', it is useful to look at the repertoires that are available to them. It seems that these are much more restricted than regarding addiction on other substances. Comparing current repertoires of talk on heroin use with the way we talk about alcohol is illuminating. Similarly to the current image of heroin addiction, the metaphor of a downward spiral was an integral part of the social imagery of alcohol addiction from the middle of the 19th century onwards. In the propaganda of the Temperance Movement at the beginning of this century the gradual physical, social and economic degradation due to alcohol consumption was graphically depicted as a downward ladder from 'the first glass to the grave' (Lender and Karnchanapee 1977). The implicated message was that by losing control over one's consumption of alcohol one would loose control over one's life. Another example of this imagery is a graph by Jellinek (1952) that illustrates the phases of alcohol addiction: pre-alcoholic phase, prodromal phase, crucial phase (onset of loss of control) and chronic phase. Similarly to current ideas about heroin use it was believed that the consumption of alcohol itself was the first step in an uncontrollable process of sliding down. The only acknowledged form of (self) control was total abstinence (see, e.g., Alasuutari 1992). Presently we have, at least in Western societies, more sophisticated ideas about the relationship between alcohol consumption

and control. As Takala (1989) has argued, the concept of 'control' is used in many different ways in talk about alcohol use. One can, e.g. lose control of a car in a case of drink and drive, or one can lose one's demeanor by drinking too much, or one can lose control over one's life by being an alcoholist. These are different uses of the concept of control and it is important when using the concept of control in a scientific context to acknowledge that it can be located at different general analytical levels (Room 1973).

Although Van de Wijngaart (1991) does not explicitly mention the concept of control, his description of four different approaches to drug use can be of help in distinguishing different meanings of control and self-control. In the moral model, of which the Temperance Movement is an example, the substance is seen as an agent that chooses its victims among those who are not able to resist. Victims are uninformed and weak-willed and therefore they must be protected and educated. In the medical model the drug is the agent and the individual is mainly seen as the victim of an illness. In the sociocultural model the addict is not only a victim of the substance, but also of society's response to it. Finally, the psychosocial model emphasizes that the substance user is an active agent himself. The latter model allows that distinctions are made between different individuals (Van de Wijngaart 1991:78-80). Although the concept of self-control is important in both the first and the fourth model, it has not the same meaning. In the moral model only abstinence is seen as a form of self-control, whereas in the psychosocial model self-control is exhibited by the ability to make distinctions between different amounts, frequencies and patterns of drug use. Moore's (1993) study of amphetamine users demonstrates the usefulness of the psychosocial model. Moore describes, for instance, how amphetamine users can purposefully suspend control of intravenous amphetamine use during a three week holiday, and regain it when they start studying or working again. This type of regaining control is very similar to how some of our respondents controlled their heroin use by going in the army, by sailing on transatlantic cargo ships, or by nursing a father with Alzheimer's disease. Moore's examples and ours demonstrate at the same time that maintaining and regaining control are not entirely individual matters but are related to factors such as having a job, having friends who do not use drugs, and having relatives who are dependent on the drug user. It is the social context that gives meaning to the drug user's life and thus allows some to maintain control of their use.

Our study, thus, highlights on the one hand the importance of social support (employment, friends, relatives) for maintaining and regaining control over one's heroin use and on the other hand the import of moral values and feelings of shame and guilt for therapy and prevention. However, our findings do not allow drawing conclusions about how therapy and prevention programmes could make use of these factors. Further study should be directed at getting more detailed descriptions of actual self-regulation behaviour, and at investigating how moral emotions such as shame and guilt may play a role in the process of kicking the habit.

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CHAPTER 5.2

Factors that influence help-seeking behaviour in opiate addicts

Introduction

Although studies on help-seeking behaviour in general have resulted in different models, theories on help-seeking of heroin addicts have not yet been developed to a large extent. It has been observed that heroin addicts have often long and varied treatment histories. A number of questions about the specific conditions that influence help-seeking behaviour of heroin addicts have not been fully answered. This may partly be a result of the many different factors that are related to getting access to care institutes. For example Aday & Anderson (1974) described in a (general) model for help-seeking that health policy, characteristics of the health delivery system, characteristics of the population at risk, utilization of health services and consumer satisfaction all play a role. The main interest in this article will be in the individual aspects of the help-seeking process, of which consumer satisfaction with respect to treatment institutes is considered to be a part.
Some of the models on help-seeking behaviour describe different stages, for example the (general) model of behavioural change of Prochaska and DiClemente (1986). In five stages a general description of behaviour changes is given. The stages precontemplation, contemplation and preparation precede a change in behaviour, whereas the stages action and maintenance describe the change itself and its stabilization. Literature on alcohol addiction includes several studies on help-seeking as well. For instance Bannenberg (1988) described three phases: 'experienced need for help', 'expressed need for help' and 'the choice for a specific agency'. And Orford et al. (1992), Pringle (1982) and Thom (1984) also described different stages in the help-seeking process for alcohol problems. These models for alcohol addiction can often be applied to heroin addiction as well. Other models, which are not so easily suitable for both heroin and alcohol addiction, are models in which different factors that influence help-seeking behaviour are identified. In this context the concept of 'illness behaviour' of Mechanic (1968) is important. It underlines the need to look at the range of factors that might influence both the recognition of a problem and the process of deciding to do something about it. An example of this approach is the study of Oppenheimer, Sheehan and Taylor (1988) which focused on drug users' reasons for seeking help and their choice of agency. They found three important factors related to help-seeking: 'realizing that one is dependent', 'problems with the supply of the drugs' and 'personal crises'. In a study of Senay et al (1981) drug abusers' different reasons to ask for professional help were identified. Drug-related reasons were mentioned most often (83%), followed by psychological reasons (48%), employment problems (48%) and social pressure (46%). Although these studies provide insight into what brings drug users to seek treatment, they have only been carried out among respondents entering treatment. A more complete understanding of the help-seeking process would become possible by including addicts outside of treatment. Therefore this study is focused on exploring the importance of factors that influence help-seeking of opiate addicts in and outside of treatment. To this end both qualitative and quantitative material has been collected. In previous studies often either quantitative information or qualitative information has been used. An example of a quantitative study is the model of Power et al (1992) based on the (quantitative) Addiction Severity. Two important steps in this model were 'concern' and 'need for help' regarding problems with drug use and other problems, both measured on a five-point scale. An exception is the study of Klingemann (1991), that contains qualitative as well as quantitative analyses. In the current study qualitative and quantitative information will be combined at individual level for a more in-depth analysis of help-seeking by a relatively small number of

opiate addicts. The objective is to determine the importance of different factors described in literature with respect to the process of help-seeking that has been recorded at individual level. Therefore the central question is: Which of the factors described in literature can be recognized as stimuli or barriers for help-seeking behaviour of the interviewed opiate addicts?

Methods

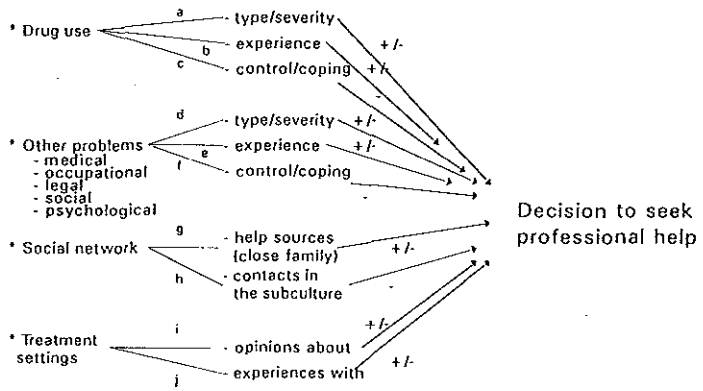
Within the framework of a more extensive study of differences between heroin addicts in and outside of treatment in the city of The Hague (The Netherlands), interviews were conducted with 48 addicts who had been using heroin regularly (three days a week or more) for at least the past two years. Information of 6 respondents could not be used because either the quantitative or the qualitative information was incomplete. Therefore the analyses are based on the qualitative and quantitative information of 42 respondents. Seven of these were women. The treatment sample consisted of 21 respondents. Four of these applied for an outpatient methadone programme, nine applied for a clinical detoxification centre and eight addicts applied for a drug-free therapeutic community. The non-treatment sample consisted of 21 heroin addicts who had not been in contact with drug treatment agencies during the past two years. They were approached by intensive fieldwork and selected by a snowball sampling method (Eland-Goossensen et al. in press).

Three instruments were used: the Addiction Severity Index (McLellan et al. 1980, Hendriks et al. 1989) in order to describe the type and severity of drug use and comorbid problems, the Composite International Diagnostic Interview (CIDI)(Robins et al. 1989) which describes psychopathology in terms of DSM-III-R diagnoses and a qualitative in-depth interview. In the qualitative interview, respondents were invited to talk about how heroin use was embedded in their lives, what types of problems they experienced and how they prevented relapses. In addition, experiences of treatment and, when relevant, reasons for rejecting and leaving treatment were explored. The qualitative interview took approximately one hour, and was audio-taped. The interviews were transcribed.

All three sources of information were combined at individual level in order to arrive at a better understanding of the factors that influence help-seeking. To this end diagrams with information per factor were made manually by summarizing the relevant qualitative and quantitative information for every respondent. This resulted in large 'flaps' of paper, summarizing quantitative and qualitative information per respondent. In this way the qualitative information did not have to be reduced too much and conclusions could be drawn more easily per respondent and per factor. The factors were part of a model that will be described next.

For the respondents that applied for treatment, stimuli for help-seeking have been analysed according to a model which includes several factors. We did not use an existing model so as not to miss out important information, but constructed a model based on the conclusions of several studies. We started off from the point of view that help-seeking is often preceded by a recent crisis (Senay et al. 1981, Sacks & Levy 1979, De Leon and Jainchill 1981). Therefore the emphasis during the interviews was on the immediate past and the model comprised mainly recent factors. First of all a distinction was made between the severity of the problems (a) (measured by the quantitative, more objective instruments) and the experience of the problems (b) (as expressed in the qualitative, more subjective interviews), since Rosenstock (1960, 1974) points out differences in the experience of comparable severe problems as an important means to distinguish help-seekers from non help-seekers.

Figure 1. Factors linked to help-seeking behaviour of opiate addicts.



Factors influencing help-seeking behaviour

The ability of drug users to control their drug use and comorbid problems was extensively described by Zinberg (1984). Because of the counterbalance of users' controlling behaviour versus regulation by means of treatment, self-regulating behaviour was also included as a factor (c). Because studies on drug use careers also describe the negative consequences of addiction in life areas other than drug use, these comorbid problems were included as a separate factor. Again, the severity of these problems (d) (quantitative data) was distinguished from how they were experienced (e) (qualitative data) and from self-regulating behaviour aimed to control these problems (f). Special attention was paid to the severity (d) and experience (e) of psychiatric problems, because several studies have shown a positive correlation between applying for treatment and psychiatric problems, such as depression (Rounsaville & Kleber 1985, McLellan et al. 1983, Rounsaville et al. 1986). In addition, the social network was mentioned as an important influence on help-seeking behaviour (Agar 1977, Biernacki 1986, Hughes 1977, Shaw et al. 1978, Zinberg 1984). Two kinds of social influences are distinguished. Firstly, social pressure of significant others or the fear to lose these close significant others can influence people to ask for professional help. Sometimes the loss of a social source of help leads to people asking for treatment (g). Especially mothers often functioned as sources of help. They prevent their children from relapsing by providing food, clean clothes, a place to sleep or even money. Secondly, contacts with other drug users may have a negative impact on the development of a need for help (h). Addicted spouses and good friends may also influence their partners or friends to keep using drugs. Finally, opinions about treatment (i) and earlier (positive or negative) experiences of the treatment system (j) have been added to the model. These factors may explain the barriers with respect to help-seeking. Some of the factors mentioned above were analysed on the basis of quantitative information, such as type and severity of drug use (a), type and severity of comorbid problems (among which psychiatric problems) (d) and number and type of treatment experiences (j), whereas qualitative information was used to analyse the other factors.

The following analysis strategy has been employed. After the information of all factors per person had been arranged in an overview, the three most important factors in relation to help-seeking were identified in each individual case. These three factors were transferred to a model for all respondents per group (in or outside of treatment), thus highlighting the most influential factors at group level. These factors are described in the results chapter. Group tendencies will be illustrated by material from the qualitative interviews.

For the respondents that did not apply for treatment the same factors have been used to identify the barriers that prevented them from seeking help. Their information was analysed in the same way in terms of reasons for not applying for treatment.

Results

Seeking treatment (n=21; 19 men, 3 women).
The results will be presented in accordance with the four clusters of factors: addiction problems, comorbid problems, social network and treatment settings. At group level, it appeared that severity of drug problems (a) and behaviour aimed to control drug use (c) were only incidentally related to help-seeking. In more cases, the way in which drug use problems were experienced (b) was important: four respondents mentioned that a feeling of concern regarding their drug use had been a stimulus to seek help. For two of those it was the lack of control as a result of the use of 'boiled cocaine' (home-made crack) that led to help-seeking. The other two respondents started to seek help after an overdose or after they had started injecting the drugs.

> [Man, age 23, TC] R: My help-seeking this time was related to the loss of my child, but even more to myself. How I was acting. I was injecting the drugs again. I think if I had been going on for two, three months, it would have been the end of me.

After the description of addiction problems, the model goes on to describe the three other factors, which concern problems other than drug use. The same pattern emerges as with drug use because neither the type nor severity of the other problems (d) is a major motivation, nor seems controlling behaviour aimed at reducing negative consequences (f) to influence the process. The experience of problems other than drug use (e) appeared to be most directly related to help-seeking. This factor, which comprises comorbid problems of a quite different nature (medical, employment, social, psychological), was mentioned by most respondents (n=16) as a motivation to look for help. For example, for eight respondents the loss of a regular job was one of their motivations and for six respondents the loss of a house was a consideration to seek help. Also for six respondents, committing very serious crimes or being in prison influenced their help-seeking behaviour.

For five respondents comorbid psychiatric problems were a motivation to seek help, such as schizophrenic symptoms like seeing strange sparks of light, experiences of paranoia or depression.

> [Man, age 28, detox] R: Those paranoia feelings were a first reason to seek help and secondly I was sliding down. It got worse and worse. I had lost my house, I lived on the street, that was no life for me... I had lost friends and family. I thought by myself I have to stop. It is going too far.

Three respondents mentioned health problems as a reason to seek help for their addictive behaviour. For one this was the experience of going into hospital for abscesses due to injecting. Another nearly lost a leg due to abscesses as a result of small neglected wounds. And the third respondent realized that because of his being seropositive he had only limited time to 'make' something out of his life.

> [Man, age unknown, detox] I: How did you come to the decision to ask for professional help? R: It was the confrontation with the other people in hospital. When I was in hospital for injection abscesses, I saw all the suffering of people around me. They had never been misusing their body like I had mine. I was lying there as a result of my own behaviour, and I felt ashamed.

These factors were not always the only ones that led to help-seeking. A cumulative effect seems to have taken place. One very good example is the story of one of the female respondents (34 years old, TC group). She and her husband had risen quite high in a criminal organization. The fact that she became pregnant and had a daughter were the first stimuli to change. The second reason to change was her uncontrolled basing of cocaine, which resulted in feeling extremely tired and depressed. The third factor was the escalation of problems with the law, when her husband stabbed a man at a dealing address, who later died. Her husband was sent to prison and she was now alone 'in business'. Drug-related health problems then ended her up in hospital, after which she lost her house. And then:

> R: These things and the police coming closer and closer were of influence. I never took them seriously, but now because I had my little girl, I started to think about these things. Specially when that boy died. I started thinking why it had happened and if I could have prevented it. Then I began to realize that I did not want these things. That I like doing nice things, like going to the beach with my child. I started thinking how can I change my life?

With respect to social sources of help (g) seven respondents mentioned that family relations were a motivation for help-seeking. Two respondents mentioned that their parents had pressured them into treatment. One respondent wanted to save his relation with his girlfriend by kicking the habit, whereas three respondents were afraid to lose contact with their children.

> [Man, age 35, methadone] R: Of course you try to quit, because you've had enough of it, of using drugs. All the time problems with your father and mother and your family. They are watching you all the time. How you are doing. And in the end you really have enough of them and you go somewhere to ask for help.

Two respondents started to look for help after losing an (important) (social) source of help. For two respondents the fact that their parents (-in-law), who had been providing them with food and a place to sleep, did not want to stay in touch anymore was a reason to seek help.

With respect to the last two factors (i,j), it is important to know that methadone programmes have a very low threshold character in The Netherlands. For the majority of clients the programme is aimed at harm reduction. It was expected that financial problems or hustling users were positively related to applying for the free substitute methadone. However, only a few respondents mentioned this as a reason to apply to the methadone programme. For instance one respondent mentioned that problems because of a lack of daily activities and having problems with the hustling were stimuli to ask for methadone. With respect to earlier experiences of inpatient treatment settings it appeared that these seemed not to be directly related to seeking professional help. Only for one respondent the large number of failed previous attempts to become clean by joining a detox programme, and the shame he felt when he failed, led to a decision to seek help from a 'now or never motivation'.

Factors that were mentioned by a number of users as relevant to their decision to seek help were: contacts with other drug users (h), opinions about treatment (i) and experiences of treatment (j). Although the general expectation was that the need for help would be negatively influenced by meeting many other drug users, some respondents mentioned that these contacts started off the search for help. For instance when the house of one respondent was taken over by drug using acquaintances, he realized it was time to do something.

> [Man, age unknown, detox] R: In my house there are junkies and dealers living now. This happened on a Sunday. I had no dope and everything was closed. Then these other users were at my door. They had drugs. I let them in because they wanted to share with me. But

> they wouldn't leave anymore. And when I objected, they hit me a few times. I got scared and left them there. They are the kind of users that have been addicted for a long time and have no place to sleep anymore.

For another user the observation that acquaintances died as a result of overdoses was a reason to start contemplating quitting the drug use.

> [Man, age unknown, detox] R: In the end you become more and more frightened to get caught by the police, you are in jail all the time, and your circle of acquaintances becomes smaller and smaller... At one stage I saw a few friends of mine dying after an overdose and I started to think: What am I doing?

Outside of treatment (n=21, 17 men, 4 women).
In order to understand why opiate addicts outside of treatment do not ask for professional help it seemed crucial to know if there was a need for help regarding drug problems. This was not the case for eight of the 21 respondents (38%). What could be the best explanation for this lack of help-seeking behaviour of these respondents? After the analysis to find out to what extent the factors of the model were related to the lack of a need for help, it appeared that negative opinions about treatment (i) were mentioned most often (by 6 respondents). In four cases this was combined with experiencing drug problems (b) as not serious (in the cases of two respondents with a short drug use career), or still experiencing control about drug use (c) (two respondents with a long drug use career). One of the respondents that experienced control over his drug use and comorbid problems knew a supportive social source of help (g) (non-using spouse). For one female respondent her addicted spouse was an important reason for continuing her drug use (h), while another respondent experienced no need for help because drugs fulfilled a positive role in his life: they suppressed emotional disturbances, which he could not cope with otherwise (f).

Thirteen out of 21 respondents outside of treatment experienced a need for help with regard to drug problems. In the analysis we checked for the factors of the model. It appeared that type and severity of drug use (a) as well as the experience of drug use (b) were not barriers for these respondents to seek help. It was remarkable that respondents in this group seemed to experience more often control over their addiction problems (c). Type and severity of other problems (d) were important factors, especially fear. Fears were reported by six out of 13 respondents. Some of them explained that their fears were directly concerned with treatment, while others reported more general fears.

> [Man, age 37, outside of treatment] R: No, I wasn't in that therapeutic community. I am afraid of it [part omitted]. Well when you are really in the gutter, when you really have been acting like a junk, burgling and so on, then I would say a therapeutic community is good. They do not brainwash you, but slowly change you. Then it is okay. But I still have my own values, I still have things that I find important. My own honour I still have, so for me this therapeutic community is not right.

Furthermore, four respondents reported that drugs helped them cope with other problems (f), such as for instance unresolved mourning or a lack of self-esteem. It appeared that among the barriers in the help-seeking process opinions about treatment (i) and previous experiences (j) of treatment were important. Seven out of 13 respondents who experienced a need for help expressed negative opinions about (or experiences of) all or specific types of treatment. With respect to residential settings their major complaints were too much 'talking' and 'group work'. Some did not like the rigid structure or had strong fears of being

changed in an unacceptable way. The social factors in the model were not clearly recognizable as reasons not to ask for help.

Conclusions

This study explored the importance of several factors that might influence help-seeking of opiate addicts in and outside of treatment. A combination of quantitative and qualitative information has been used. Analyses were carried out at individual level (n=42). Because of the small number of respondents the results have an exploratory character.

The first aspect of the central question was which of the factors could be recognized as motivations to seek help. It was found that not all factors in the model were regarded as equally important. For some drug users the (subjective) experience of drug use problems started off their search for help. Although Senay et al. (1981) also found that for the majority of their study group drug-related reasons were an important stimulus to seek help, we were able to analyse that it was not the severity of the drug-related problems (quantitative data) that was most important. It was the (subjective) experience of drug problems that really made the distinction between help-seekers and non help-seekers. This is in line with the remarks of Rosenstock (1960, 1974), who pointed out the importance of the subjective experience of problems in relation to help-seeking. Another factor that was found to influence help-seeking was social relationships (with close relatives). Parents or spouses functioned as a social source of help (which could be lost) or were exerting pressure. Respondents also said they sought help in order not to lose their partner or contact with their children. If contact with children had already been lost, the wish to restore relationships was a main motivation to change for some users. Although we expected that having contacts with other drug users would be an important barrier with respect to help-seeking, some respondents described that observing the behaviour of drug-using acquaintances started off their help-seeking.

Furthermore, it was found that problems other than drug use problems were the most important stimuli to seek help. These problems were found in different life areas, and often a cumulative effect of problems in several life areas was reported. Contrary to our expectations, psychiatric comorbidity did not appear often enough to be mentioned by the respondents as a stimulus to seek help. Although several researchers found that opiate addicts with severe psychological problems apply more often for inpatient treatment settings (Rounsaville & Kleber 1985, McLellan et al. 1983, Rounsaville et al. 1986), the respondents did not mention this as motivations. This might again point to the difference between the severity of problems as described by researchers and the experience of these problems described by the respondents (Rosenstock 1960, 1974).

The stories of opiate addicts outside of treatment were analysed with the same model with respect to barriers regarding help-seeking. It appeared that nearly one third of the respondents outside of treatment did not experience a need for help for their drug problems, which can be interpreted as the best explanation for not seeking professional help. Although we focused on defining the importance of several factors with respect to help-seeking, it points out the importance of phase-oriented models as well. Previously we already described the precontemplation phase of Prochaska and DiClemente's model. In this phase there is no need to search for barriers and motivations, because help-seeking is simply not yet an issue. It was remarkable that almost all respondents without need for help also expressed negative opinions about treatment. Other barriers were the subjective experience of the drug use as not serious, or still feeling in control over the drug use. Social reasons were mentioned incidentally as barriers, as was the positive influence of drug use on coping with other (for instance psychological) problems.

Among respondents outside of treatment that expressed a need for help the main barriers were fears (more or less focused on treatment) and negative opinions about treatment settings. For some users a positive labelling of their drug use was a counterbalance to help-seeking. They said it helped them cope with other problems. That social sources of help and contacts with other drug users were not mentioned by respondents with a need for help, could imply that these factors do not influence or inhibit the development of the need for help nor the action of help-seeking itself. Another interpretation of this result could be that these social influences are not optimally measured by an in-depth interview. (Participant) observation might be a better method to describe the influence of drug-taking acquaintances on help-seeking behaviour.

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CHAPTER 5.3

Methadone supply in The Hague; clients' views

Introduction

Over the past few years, the drug treatment system has expanded to include a wide variety of options. A user can choose from many treatment types which vary from a low-threshold walk-in centre to a long-term, intensive intramural treatment. Of these options, methadone distribution adopts a specific position. A large number of heroin users participates in such a programme at some stage. Methadone programmes differ, however, both on national and international level. This is due to, for example, varying objectives such as abstinence or harm reduction (sustenance), and also to differences between the organisation of the distribution, such as a central counter, a bus or a GP. In the United States, for example, there are programmes in which much larger quantities are distributed, linked to stricter requirements in comparison with for example the low-threshold Dutch programmes (Ball & van de Wijngaart 1994). Notable is the sheer absence of evaluation studies and effectiveness studies of the various programmes, both on national and international level. This could be related to the complexity that such a study would entail. However, it is not a valid reason for the virtually total absence of such studies. Hall (1993) describes that an evaluation of methadone programmes is often linked to the extent to which abstinence is achieved. Because such evaluations are only concerned with just part of the objectives, the advantages of methadone distribution in terms of harm reduction are being underestimated. Evaluation research in which the harm reduction component is not considered would then lead to too negative results. Zinberg (1977) confirms this reservedness with respect to the harm reduction objective. He describes that a difficulty lies in the moral dilemma that policymakers feel in continuing the addiction by way of distributing methadone in sustenance quantities. A Dutch study into methadone distribution was carried out by Van de Wijngaart and Verbraeck (1991). After a qualitative description and analysis of the practice of methadone distribution in the town of Utrecht, they come to the conclusion that the discussion about the pharmacological characteristics of methadone should be elaborated upon to include the users of methadone and the interaction of drugs, set and setting. Their recommendations point towards a small-scale, very differentiated distribution. From this point of view, workers in methadone programmes could be distinguished according to different aspects of the programmes: distributors, workers in therapy projects, people that refer and treat addicts.

This paper reports on the opinions and experiences of heroin users with regard to methadone distribution. In this way, this paper could contribute to the social and scientific discussion about methadone programmes. After all, the discussion also offers room to the views of heroin users. Information as to how heroin users experience the use and distribution of methadone also seems to be relevant in view of Dutch plans to start an experiment with regard to heroin distribution. The central research question in this paper is as follows: What are the opinions and experiences of heroin users in and outside of treatment in The Hague with respect to methadone distribution?

Methods

The qualitative interviews which provided the data in this paper, were held in The Hague and surrounding towns. Of the 48 interviewed heroin users had 21 users not had any contacts with drug treatment facilities for at least two years. The other users had reported for participation in methadone programme (5), a clinical detoxification programme (11) or a therapeutic community (11). All respondents were 18 or older, lived in and around The Hague and had been using heroin for a minimum of three times a week (or more) for two years. In selecting the respondents, efforts were made to include users outside of treatment from the various networks (Eland-Goossensen et al. 1995). As for the respondents who reported for the different treatments, the aim was to interview a group of users with a great diversity in terms of characteristics such as age, sex and cultural background. This sample, however, is not representative to the general population. On average, the qualitative interview took about an hour to complete. The objective is to see into addicts' experience of drug abuse, so as to complement quantitative data that were obtained by means of other instruments (Eland-Goossensen et al. in press) The standard first question was: What has been the influence of drug abuse in your life? The next question focused on treatment-seeking behavior such as experiences with methadone distribution, detoxification programmes and therapeutic communities. Also opinions about these programmes have been recorded. No further specific questions about methadone have been asked. To motivate heroin users to participate they received a payment of fifty guilders [about 18 pounds sterling] for three interviews (two quantitative and one qualitative). To create a familiar and pleasant atmosphere in which to hold the interviews, the interviews were, when possible, conducted with respondents at home. The interviews were recorded on tape and then typed. Two interviews were lost due to bad sound quality. After they had been typed, the interviews were processed by way of a qualitative analysis programme (Ethnograph), in which the text is categorized. The interviews have been analysed by exploring the fragments in the open interviews with the code 'methadone'. These have been ordered and furthermore was counted how many respondents had comparable opinions and experiences.

Results

Methadone

This section contains quotes from interviews with respondents about methadone programmes. The statements of the respondents are represented according to the following themes: positive opinions, withdrawal symptoms, side-use, daily routine, reverting, regulations, counselling and ideal treatment type.

Description of the methadone programme

At the time of data collection for the research (1993-1995), the methadone programme in The Hague was situated on a bus, where methadone was distributed at different locations, such as the port of Scheveningen. Occasionally, there was also a van where coffee was handed out at different distribution locations. After reporting to headquarters (identification and address compulsory), a user was allocated a specific location and time. There were special distribution times for working users. Regular visits to the methadone doctor were a prerequisite for continuing the distribution. In addition to methadone distribution, which can be either a sustenance or a reduction treatment, various other types of counselling were available. Side-use of other drugs during methadone treatment is regarded as undesirable; the extent to which side-use is tolerated and can be openly discussed depends on the doctor.

Positive Opinions

The intention of Dole and Nyswander (1967), founders of the current methadone programmes, was to eliminate withdrawal symptoms, cancel out crime and improve social re-integration of heroin users. These original objectives are mentioned by some (n=3) users:

> [Man, 41, outside of treatment] I: What do you think is good about it? R: Well, when I had some methadone, I didn't need any more dope for almost 24 hours. That's a few grams a day. Think of what you'd have to do for a few grams of dope!
>
> [Man, age unknown, detox] I: Did you do anything to control your drug habit? R: Yes, I asked for methadone, because I didn't want to sink so low that I'd step into a bank and rob it. After all, I always have my methadone to fall back on. Because I knew that there was a possibility, knowing myself, that if I was ill I'd go out and do funny things.
>
> [Man, age unknown, TC] R: Like now, with methadone, I can stay at home, but if they know I was using, then ... I shouldn't even try and use it at home, that's how it is ... I can sleep there and eat there, but not use anything ...

Withdrawal symptoms

An advantage of methadone is that it works longer. Within 24 hours one should not experience any withdrawal symptoms, whereas with heroin they begin after 8 hours. Although on the one hand the effects of methadone are thought to be positive, 8 respondents experience a related disadvantage; the (supposedly) longer and more serious withdrawal symptoms when the use of methadone is stopped.

> [Man, age unknown, detox] I: So you've briefly had methadone? R: Once or twice I bought methadone on the street. I just knew it, I saw guys around that take and get off methadone all their life. Well, you get twenty times as ill as from dope.
>
> [Man, 44, outside of treatment] R: You really have to go through it yourself to go through it. It really hurts, in your bones and your marrow, when you get off that stuff ... I mean, heroin makes you ill for three days, but methadone you really are weeks ... It goes into your marrow and your bones. All bodily functions are jolted.
>
> [Man, 41, outside of treatment] R: This methadone, it just helps. But getting off it is the worst. You're better off using heroin or methadone, only one of them. Because usually people take both. I did that for a while. That's really bad, because I was arrested and then got straight off it. And off heroin, and off methadone. It took a few days before I sorted something out, at the police station. And then you get ill ... twice as ill.
>
> [Man, 35, methadone] R: Getting off methadone is worse you know. Just better to get off heroin, it will hurt for four days, but methadone is months, honest.
>
> [Man, 31, outside of treatment] R: I didn't want to use methadone, because I could see my friends when they were using methadone that they got really ill.

Side-use

With ambulant methadone distribution, which is common practice in The Hague and throughout the rest of the Netherlands, users remain in their own environment during the distribution. The result is that addicts can stay in touch with the subculture of users and use (continue to use) other drugs in addition to methadone. The temptation of side-use is mentioned by many (n=21) respondents. For some of them the use of other drugs is inevitable. In The Hague there are no standard check-ups for side-use during a sustenance treatment. It is striking that respondents often express their disapproval about the lack of check-ups for side-use.

[Man, age unknown, TC] R: I was given a dose of 50 milligrams of methadone. That's a lot, quite a lot so I've noticed. But they don't check me over whether I use anything else. And when I see that eighty, ninety percent, and that's still modest, takes other drugs ...

[Man, 28, outside of treatment] R: I don't want to actually. If there wasn't any heroin, then I would take methadone. Yes, then I know for sure that I wouldn't use anything else with it. But as long as I know that heroin is around the corner, I can't get methadone and something else, 'cause then you're addicted twice over and I don't want that.

[Man, 35, TC] R: To be honest with you, it's just too easy, if you want you can get 75 milligrams, no problem, the largest dose. Even though it may not be wise to do so. So they'd have to get tougher, with urine checks. And if you're using again they reduce it. I know I'd stick to it if that would happen. I: The big stick, so to speak. R: Maybe it doesn't work at all that way, it's just too easy. Everybody uses something else in addition, I hardly know anyone that takes methadone only. Only the people who have a job. I myself have been taking methadone for years, but I don't get off it, it just sustains the habit. I steal as much as I did before. It was even easier, 'cause you don't have to go in to town when you're ill. So you manage even better.

[Man, 38, outside of treatment] I: And methadone, what made you decide to ask for it? R: That was just very easy, it's a replacement drug in fact. When you've got no money, you still have something. You should really just use that and not something else. Otherwise ... I think that out of 600 people that visit the bus, 599 use something else as well. I: What do you think of that? R: I think that's really bad. They've got to have tougher checks. Used something else five times in a row? Then you're out. It's better for me as well, because how things are going now I'll never quit.

[Man, 30, detox] R: Yes, methadone and something else as well, it gives a really flash effect you know.

[Man, 33, methadone] R: Sometimes it's a little too easy. Too easy to get methadone. And you can say that you use something else, doctor I want 75 milligrams and you get 75 milligrams without urine sample checks or anything. I think it's important that when you get methadone, they should keep you occupied ... Not just a chemist saying here's your methadone sir, bye bye! Because you turn into a zombie. I felt like that anyway. All those years I used methadone, I used something else too. Mentally, you're standing still, don't feel anything, don't see anything. You're better off to stick with heroin and use a lot and then get off it like a cold turkey. And if you want methadone, get on the methadone programme and urine checks twice a week.

[Man, 28, detox] R: Well, they just start using heroin and have methadone for dessert. That's how it is. When they can't afford it anymore they start looking for something else. But if they're really looking for something else they've got to have stricter check-ups. That's the bare fact.

Daily routine

The respondent below participated in a methadone reduction programme and has managed to get off the habit. For him, this result was clearly related to having a meaningful daily routine.

[Man, 35, TC] R: I managed to get off the habit, but I did have work at the time ... That was when I lived with my girlfriend and she said: Go out to work and get methadone. Then you can do it, when your day is more or less structured and you get methadone. If there's nothing to do and then take methadone, that doesn't make sense at all.

For another the structure of the methadone programme in itself is a barrier (or excuse?) for finding a meaningful daily routine.

[Man, 44, outside of treatment] R: Now you've got to plan your day around that moment when you can get your methadone drops. And for the rest of the day you just simmer slowly - that's not a life? You can't really do anything because you've got to get methadone again the next day.

Reverting

The fact that the distribution of methadone brings together many users in a relatively short span of time, results in a large number of appointments and meetings around the distribution point. People are often waiting near the bus for somebody because they know he or she will turn up soon. "Mainlines" and "Dokter Usegoods" (magazines for drug users) are handed out as well. Not everybody regards social life around the bus as a positive aspect (n=4). Especially when further involvement with the subculture is not desirable.

> [Man, 37, outside of treatment] R: But methadone is completely wrong. You see, if you're down to two, three drops, and you're cutting down, then the last drops are the hardest. You're on your way to the bus. You meet everybody again. Somebody got some [heroin] one day, and you're lost [revert]. Look, you should be glad to get it, but the structure is very bad.

Regulations

Freedom and restrictive regulations are topics that are frequently mentioned in relation to methadone programmes. Nine respondents have problems with the regulations. On the one hand, these regulations serve to structure the programme (for example with regard to location and time), on the other hand they also aim to improve users' well-being. Creating some stability in someone's drug habit could be a (hidden) side-objective of distribution in a sustenance programme. From this perspective, it could happen that a distributor goes against the wishes of the client, who might want to change his dose on a regular basis.

> [Man, age unknown, detox] R: What I can't figure out, typical for the present treatment system by the way, is that in the past you had to beg if you needed more methadone. Nowadays you have to beg for less methadone. Well, I really call that in question. I've always thought that they were never there to help me. That in the entire methadone thing they were too wrapped up in their regulations, which they frenetically adhere to so that certain options were not available.

> [Man, 56, outside of treatment] R: The last time I visited the methadone bus was for three years non-stop, and whenever I wanted to reduce the dose it wasn't possible. Because I had to have a urine check twice a week first. So, my view is this: At the CAD [Consultation Centre for Alcohol and Drugs] they want you to stick around for as long as possible. Because they get grants for every client and they want you to stick around for a long time.

> [Man, 35, methadone] R: For if I want a drop less, I've got to ring the doctor. But I know how much I use and I know how many drops I need, so I say: Well, I need eleven. I'm on eight for example. Then the doctor says: No, you'll get fifteen. And you stay on fifteen for three months.

> [Man, 28, outside of treatment] R: They've got to have regulations, but they should take into account the people. Look, if I'm too late three times, they'll say to me that I'm excluded from the programme. But when it's the first time they exclude you for one day or two days then I'm really in the mood to throw a brick through all those windows. They don't listen because they think it's only a junkie's story anyway.

> [Man, 44, outside of treatment] R: You arrive at the CAD where you get things like a point change [get methadone from another location or on another time], fail to show up twice in a row and you're out, waiting periods of weeks and nowadays even longer. I say to myself, this has absolutely nothing to do with treatment. ...You get a number, alright, makes sense, but they really treat you as a number as well and moreover, you're treated as if you're retarded, that's my experience right now.

As far as the intake procedure is concerned, waiting periods and having to return several times before distribution begins, are reasons for discontent.

> [Man, 44, outside of treatment] R: That's exactly what I mean when I say it should be possible to pick up the phone and er..., phone up and say do something about it. There's a waiting list of six, seven days. Okay, this is an intake chat, you may come back some other day to see the doctor and perhaps the day after that you might possibly get some methadone.

Counselling

Some respondents (n=8) feel belittled by the regulations and by social workers.

> [Man, age unknown, detox] R: I've been addicted for, let's see, twenty years and on a number of occasions I stopped taking heroin and took methadone instead and about two, three, four weeks later I was running that shop and serving people: solicitors, ministers, ambassadors and the bin man, everybody comes there. I'd been running that shop for five years and when I visited the CAD they treated me like a little mite, so weird how they treated me.

There are positive experiences too. The respondent below illustrates that the relationship with a social worker can be very stimulating.

> [Woman, 39, outside of treatment] R: My only positive experience was with one of the doctors, a psychiatrist or something. There were four of them and with one I had a good relationship, so that I was really inclined to go back every week and cut down on methadone. This doctor motivated me not to use anything else, I managed to keep it up for a while too.

A number of users (n=5) ask for more (involvement in) counselling by, for example, social workers who visit users at home.

> [Man, age unknown, methadone] R: I think there's not enough counselling, in the bus, somebody should be there. I think that people are much more receptive than when they have to go to some building in the 'Scheveningseweg' [a road in the centre of The Hague]. Like the social worker that pops round at our place now. You really get a good relationship with people like him, you can really talk to them. Slowly you open up. Instead of weird compulsory chats with doctors and so on. I don't see the point of that. I only see a solution if there was more social work near the bus.

Ideal treatment type

The answers to the question what is the ideal treatment type reveals that methadone distribution without reprisals for side-use does not appeal to every respondent.

> [Man, age unknown, TC] R: But I think when I imagine the ideal treatment, I think I wouldn't know what to change about it, the only thing I can think of is to give methadone to people who are not using something else as well. By means of urine checks, twice a week.

The fact is that previous to admission to the programme, the large majority of participants uses not only heroin, but also various other substances (Rodis (Toet 1996); Ladis (IVV 1996)). In the terminology of a methadone programme, in which opiates take centre stage, this polydrug abuse is re-defined to 'side-use'. The reactions of the respondents show that the social worker, who sometimes and wrongfully takes the view that methadone distribution will check on every single drug that is taken, assumes to have a say about the client's needs. However, the user thinks that he knows best about the nature and severity of his intoxication or withdrawal symptoms as a result of the various drugs used. On this basis the user thinks he knows how much methadone is needed to avoid getting ill or, for example, to suppress the effects of the consumed cocaine. The idea that one cannot be frank about side-use is often experienced as an inconvenience by respondents.

> [Man, 44, outside of treatment] R: I would like to talk about side-use instead of being afraid they might stop the treatment.

The next respondent describes the need for a more flexible distribution.

> [Man, 45, outside of treatment] R: Those waiting lists, those doses and so on. Well, as for me it should be completely liberal. I want to be able to just go there whenever you feel like it. Just say, hey, I feel ill and miserable, I can't score today, I need twenty drops or fifteen or three right now. Not that a doctor says, well no, four is really not enough for you, you can start with twelve.

However, if on the basis of respondents' frankness, a flexible distribution, which is tuned to the need of the moment, was to go ahead, it would create huge organisational consequences for the programmes.

Conclusion and discussion

Before discussing the results a methodological comment has to be made. The sample used is not representative to the population. Although this is common in qualitative studies, there are consequences. The most important is that the numbers of respondents with a certain opinion may not be generalized to the total population. In order to know exactly how many heroin users of the population share the presented opinions, this should be measured with a questionnaire among a large number of heroin addicts in and outside of treatment.
The central question in this paper revolves around the opinions of heroin addicts in and outside of drug treatment situations with regard to methadone distribution. We did not expect that the majority of the interviewed respondents call in question the substance, the programme structure or the workers in the methadone programmes. One of the most important points made is that polydrug abuse (side-use) of heroin or other substances in addition to the distributed methadone is tolerated. From statements made by drug users it emerges that the use of different substances is not unusual. However, from the quotes it also emerges that many users find it hard to be honest about their side-use to social workers.
Where, on the one hand, the truth (the use of other substances) is partly concealed by the user, there are on the other hand expectations of a confidential atmosphere during consultations. On the basis of the knowledge that the majority of drug users nowadays are polydrug users, it seems justified to question a treatment system which is centred around the distribution of only one of these substances. The question emerges as to what extent is the harm reduction objective achieved in this situation. A simple solution is, however, not available. The distribution of several substances, among which cocaine, is difficult because there is no saturation point when cooked cocaine (home-made) or crack (ready-to-use) is used, which there is with heroin. Moreover, as long as some users continue to use cocaine, for example, they will still need a considerable amount of money, which is often obtained by committing crimes and by other unconventional activities such as prostitution. This means that as long as the treatment system does not address polydrug abuse, nuisance problems will not be reduced, which was the original assumption. In short, the complexity of the present addiction problems could be interpreted as an incentive to re-consider the structure of the present methadone programmes, which were originally designed for just heroin addiction.

Another conclusion that can be drawn on the basis of the statements about side-use is the importance of the setting where use takes place. This was already mentioned by Van de Wijngaart and Verbraeck (1991). The distribution setting might also be linked to side-use. Many users feel apprehensive about formalizing the user setting. Having to go to the methadone bus, wait there, drink and then leave is not very nice. It has no atmosphere, does not fulfil any social need. It is more like a physical occasion, that possibly only partly satisfies the (psychological) appetite or craving. In a possible future heroin distribution experiment this will probably be a recurring and even bigger problem. Because of the short-term effects of heroin, users will have to appear in the distribution location several times a day. A solution for the objections to institutionalized administering of substances has not (yet) been found. If drugs are simply handed out this will lead to selling on these substances on the black (grey) market.

The problems respondents have with regulations can be regarded as part of a negotiation process between user and distributor. In this process, users keep changing between handing over responsibility for their own use in order to protect themselves (check-ups) and taking back that responsibility in order to give the addiction free rein again. This inconstancy could also influence the relationship with methadone workers. At one moment users ask to take over

responsibility from them, the next moment the worker is confronted with an angry client because he feels belittled. This may cause weariness or burnout on the part of the workers, which is reflected in being less involved and less interested. The question is whether these problems would be reduced by introducing more differentiation. One user might need more of one thing (strict counselling) whereas the other user might need something else (freedom to do what he wants). A user's needs might also change depending on the different stages of his addiction career. Differentiation on the part of the social workers is considered to be a step towards improvements by Van de Wijngaart and Verbraeck (1991) too. For example, in the shape of a division between distribution and counselling (social and psychological). This will clarify the role that workers have and benefit confidentiality with clients. A disadvantage of such a differentiation is the fragmentation of information about the clients and a more complex cooperation.

Finally, we wish to emphasize that the low-threshold character of many methadone programmes in the Netherlands is an acquired phenomenon, which, in our opinion, should be maintained because of the positive harm reduction results. The statements made by the respondents during this study can be interpreted as an incentive to review the current objectives, the structure of the programmes and the role of social workers. Although opinions of methadone users may contribute valuable information, they only show one side of the story. That is why it is of paramount importance to also include experiences and opinions of social workers and policymakers in the discussion, as well as quantitative data about the performance of participants in methadone programmes.

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6. General conclusions and discussion

In this study opiate addicts who applied for a methadone programme, detoxification programme, therapeutic community and outside of treatment have been compared at nature, severity and extent of drug use and accompanying medical, legal, employment, social and mental problems. The following differences between the study groups have been found.

With respect to **demographic variables** it was found that opiate addicts outside of treatment were older on average due to a smaller number of addicts under 25 in this study group. That these young opiate users ask more frequently for professional help might indicate that they are less able to prevent negative side-effects of drug use. It could also mean that they (still) have more confidence to ask for professional help because they have less negative experiences compared to their older counterparts. These negative opinions or experiences could be reasons for older respondents to stay away from the treatment system. Either way, it seems to be positive that a large number of young opiate addicts find their way to treatment and learn what it has to offer, by participating. That respondents outside of treatment reported less severe problems with drugs might indicate that users over 35 years old, which make up a large part of this group, were better able to minimize negative consequences of their addiction. Studies of the development of addiction careers, as for instance the thesis of Prins (1995), stress that these older users have a greater chance to 'mature out'; grow out of the addiction 'spontaneously'. Respondents with a cultural background other than Dutch (often from minority groups) were also found more frequently outside of treatment. This might indicate that these users apply less often for treatment. This study did not contain enough qualitative data about these users to determine motivations for their less intensive help-seeking behaviour. On the one hand, cultural barriers in terms of a strong attitude to solve problems within the family could be a reason. On the other hand, treatment programmes might be negatively evaluated with respect to their accessibility for users from these minority groups.

With respect to the differences and similarities in **problems of users in the study groups** it was found that a clear difference existed between opiate addicts that applied for an inpatient treatment setting (detox or TC) and those who asked for methadone or stayed outside of treatment. The inpatient groups reported considerably more social and mental problems, expressed more concern regarding these problems and showed more need for help in these life areas. The social problems mainly existed of problems with close relatives. Examples of mental problems (measured with the ASI^{R}) were: traumatic experiences, concentration problems, uncontrolled aggression, tension/fear or depression. At DSM-III-R level respondents in the inpatient groups more often reported major depression, alcohol disorders (Axis I) or an antisocial personality disorder (Axis II). Other characteristics of opiate addicts applying for inpatient treatment settings (measured with the ASI^{R}) were: less unemployment, less unconventional incomes (as a result of dealing, prostitution, crime), and more problems with drug use. The drug use career of the TC respondents was not different as regards period of heroin use, but in this group the largest number of different drugs were used on a lifetime basis. Their treatment history was most complex, by having spent the largest number of treatment periods in the largest number of different treatment settings.

Opiate addicts outside of treatment seemed more integrated in the 'subculture of street life'. Only some of them mentioned regular salaries as the most important source of income, more respondents lived on social benefits or (and) from unconventional activities. They had more often been in contact with the police for possession or dealing in drugs and more respondents were involved in illegal activities in the past month compared to the methadone and detox group. The social problems of these respondents are more concentrated around

problems with 'important others', which are often other drug users. This also indicates that this group is more involved in the subculture of drug addicts. The subjective items of the ASI^R show that respondents outside of treatment were more often satisfied with their living situation and spare time activities in comparison to respondents in the inpatient groups. Respondents outside of treatment mentioned the largest number of years of heroin use (drug use career), which was comparable with the other groups after adjusting for the higher age of these respondents. The treatment history of respondents in the outpatient group showed the lowest level of participation in different types of treatment. However, this in part is due to the inclusion criteria that were used. Less psychiatric problems were mentioned in this group compared to both inpatient groups (detox and TC), except for social phobias that were reported most in the group outside of treatment. Stating that this might be linked with the lower level of treatment participation would be speculative. However, the subject of fear as a barrier to seek treatment might be elaborated upon in further studies.

The respondents who applied for the methadone programme showed more problems with drug use compared to the respondents outside of treatment, but less problems with family, employment and health. In fact, they showed least social and psychiatric problems of all four groups. This was not as expected. We had expected the respondents applying for methadone to mention more problems than the respondents outside of treatment. A satisfactory explanation for these results was not found. It seems that the methadone respondents had not fallen as much on the social ladder as the respondents outside of treatment. More of the methadone respondents still have a job, or live with their partner and families. Their problems are concentrated around the drug use and less around other life areas such as employment, family and health. It could be that they are still in an earlier (less severe) phase of the addiction process, in which it might be easier to meet the requirements of the methadone programme, for instance having to pick up methadone at a regular time every day.

An important issue in this study is the process of help-seeking. Specifically the decision to ask for professional help and the choice for a specific type of treatment were considered important. Quantitative information showed that social and psychiatric problems were related to seeking inpatient treatment. This result was not new, but confirmed the results of a study by Rounsaville and Kleber (1985). Furthermore the quantitative data showed that problems with employment, finances, health or illegal activities appeared not to be the main stimuli in the help-seeking process. Fears were more often found among respondents who had sought inpatient treatment. However, a condition for being interested in help-seeking is a feeling of concern or need for help. The high percentage of respondents outside of treatment and in the methadone group that express to be rather satisfied with their living situation and spare time activities, might indicate that these users did not enter a stage in the help-seeking process in which action is undertaken or even considered.

The qualitative analyses showed that most often an accumulation of problems other than drug use were stimuli to seek help, for instance the loss of a job, spouse or house. Moreover, the experience of drug problems was important, as well as social relations with close relatives. Barriers in the help-seeking process appeared to be not experiencing a need for help, the experience of the drug use as not serious or experiencing control over the drug use. Another barrier was that respondents labelled their drug use as positive, because it helped them cope with other problems. A very important barrier was the negative opinions about treatment or negative experiences of treatment.

Conceptual and methodological conclusions

Conceptual issues

Although the character of this study is predominantly descriptive and not meant to test a theoretical model, conceptual elements were discussed with respect to sampling hidden populations, addiction career, comorbid psychiatric and addictive problems, typologies of addicts and help-seeking. With respect to some of these theories, a number of suggestions can be made on the basis of the data in this study.

With respect to the **methodology used to sample hidden populations** we found that some sampling strategies were described in literature and that their use often remained limited to one study. An exception to these specific attempts is snowball sampling with nominee selection, which has been used in several studies and is discussed in international workgroups. When we tried to match our experiences with the literature on this method, we found a gap between the theory about sampling strategies for hidden populations and the practice of these strategies. Two specific recommendations came up to join theory and practice. The first is to perform computer simulations of the nomination technique. This could result in parameters for acceptable chain lengths, and percentages of look-a-likes as well as corrections for bias. Simulations would also enable an evaluation of the representativity of the sample obtained by this type of sampling for hidden populations. The second is to perform an experiment in which the method is applied to a population with a known sampling frame. Then the traditionally drawn random sample and the snowball sample can be compared and discussed.

With respect to the theories about **addiction career** we found that operationalization of this concept into quantitative information is often difficult and leads to conclusions on too few aspects. Qualitative analyses resulted in the insight that the development of the addiction career can be understood as an outcome of on the one hand loss of control resulting in a downward spiral of material, social and emotional losses and on the other hand of controlling behaviour that prevents, stops or withdraws the negative effects of the addiction. We found that in this process individual values are an important factor in understanding the mechanism of self-control. Our respondents often expressed adherence to general social norms, although they were not able to bring their behaviour in line with these accepted norms. The tension originating from this discrepancy between accepted moral values and actual behaviour can start off forms of self-control.

With respect to **comorbid psychiatric and addictive problems (dual diagnosis)** we found that the instruments used to define these problems are of very great importance. The relation between both types of disorders is not yet clear. It is because of this lack of knowledge that many researchers and clinicians depend on the instrument they use to describe both types of problems. We analysed differences between two systems that are often used (severity ratings of the Addiction Severity Index and the DSM-III-R classifications) and found that large differences existed between the data of these systems. This was partly related to one system providing dimensional measures (with a cut-off point to define certain categories), whereas the other system provides categorical measures. Furthermore the ASI^{R} data on mental problems are considerably less extensive compared to the CIDI data. Notwithstanding these differences in operationalization, an acceptable amount of agreement should be found when the data of both systems are compared. That this was not the case could be interpreted as a necessity to open a discussion on agreement in definitions and measurements of the dual diagnosis problems. This is also strongly related to the lack of unity in typologies of dual diagnosis patients, which we discovered in existing research literature.

With respect to **help-seeking**, the exploratory analysis of factors that influence help-seeking behaviour showed that the subjective experience of problems with drug use

(injecting, overdoses and basing boiled cocaine or crack), and the pressure from parents or partners had been stimuli for some of the respondents to seek help. For the majority of respondents a combination of comorbid problems (in different life areas) influenced the need for help. For instance the loss of a house, contact with children and health problems together led to the experience of need for help. Barriers in the help-seeking process were not experiencing this need for help, the experience of the drug use as not serious or experiencing control over the drug use. Another barrier was that respondents labelled the drug use as positive because it made them cope with other problems. A very important barrier were the negative opinions about treatment or negative experiences of treatment.

Methodological issues

One of the methodological limitations of this study is the representativity of the sample outside of treatment in relation to the general population. Although we described the used method as well as possible, and minimized uncertainties as much as possible, a random sample of addicts outside of treatment cannot be guaranteed. There is one indication that some social networks have been ignored. During the fieldwork period young Turkish and Moroccan youngsters were observed who were involved in dealing circuits. For example, they delivered the drugs to the dealers. Although not all of them used drugs, it was expected that many of them would become addicted. They were, however, not represented in our sample. There could be an explanation for this. From the stories of the respondents about these youngsters, it became clear that they were actually very young, certainly under the age of 18, which was the minimum age for participating in the study. They might have been excluded because of a short drug use career; less than two years, using opiates (at least) three times a week.

The treatment samples existed of (a selection from) consecutive admissions. It is important to note that the respondents were interviewed before the treatment started. This implies that no effects of the treatment interfered with the data. The moment of the interview further means that almost all respondents were under the influence of drugs when the ASI^{R} interview was conducted. It was not possible to use the same procedure for the CIDI interview. Therefore the CIDI interviews were conducted immediately after the two weeks that respondents had been in the inpatient settings. Shortly after these two weeks the detox respondents who did not continue with a long-term clinical treatment left. This meant that during the CIDI interview the respondents outside of treatment could be under the influence of different types of drugs, the respondents in the methadone group were using methadone and the respondents in the inpatient groups were not intoxicated. Given the practical limitations there was no other possibility. The qualitative interviews were conducted at different moments in time after admission, with a minimum stay of two weeks in the treatment settings.

Reliability and validity

The data of this study exist of self-reports. Different types of bias are known with respect to self-reported data on behaviour, especially for addiction. For instance conscious or unconscious underreporting or overreporting may occur. These types of bias are not unique to addicted respondents, but they might be stronger among these respondents than in other cases in which retrospective information is collected by self-reporting. In order to answer the research questions we had to deal with opiate addicts outside of treatment who were using drugs. During the interviews we carefully tried to avoid distorting influences on the self-reports. Whenever a respondent showed withdrawal symptoms or was not clear-headed due to intoxication, the interview was rearranged to another time. Recently Hammersly (1994) discussed the importance of memory phenomena for addiction research and concluded that among the different research instruments for addiction, self-reports will

remain an essential method. Other effects may be caused by differences between interviewers. To minimize differences, meetings with the interviewers were regularly held so that interview techniques and difficulties could be discussed.

Recommendations for future research

The conclusions of this study have shown that there are differences between the study groups. Due to the different types of collected data, qualitative and quantitative descriptions of the groups could be made. However, since data were collected at a specific moment in time, long-term variables such as drug use career or treatment career could only be described retrospectively. A study with repeated measurements would make possible better descriptions of these long-term variables. Such a longitudinal study may also include a more precise description of different types of control mechanisms and possible changes in self-regulating behaviour over a longer time interval. A continuous monitoring of opiate addicts in treatment, in prison and outside of treatment, however, would provide the best information of opiate addicts in different situations.

Further recommendations are to study the model for help-seeking that was developed in this study, among a larger group of respondents in a quantitative study design. The development and refinement of sampling methods for hidden populations could be continued further by carrying out the earlier described experiments and simulations. Yet another idea for future research would be to further develop the definitions for opiate addicts with different types of psychopathology (dual diagnosis), which was found to be strongly related to the sort of instruments used to measure psychopathology.

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7. Summary

Section two describes the study design, methods and materials. **Chapter 2.1.** The aim of the study was to compare opiate addicts in and outside of treatment. On the basis of this comparison insight can be gained at reasons to ask for professional help and the choice for a specific type of treatment. In this chapter the combination of clinical and field research traditions has been stressed. Furthermore some first data were discussed. **Chapter 2.2** describes how access was gained to the subculture of heroin users outside of the drug treatment system in The Hague. The following steps were made to achieve this goal: ethnographic orientation, first contacts made by the community field worker and the researcher, development of the map with social networks, and entering different networks through several entrances. Qualitative descriptions are given to illustrate this methodologically important step of gaining access. In **chapter 2.3** the sampling strategy used outside of treatment is discussed. Because of the lack of a sampling frame outside of treatment (a characteristic of all hidden populations) it was not possible to draw a random sample. Out of the different possibilities to solve this methodological problem, snowball sampling seemed the best opportunity. The theory of this method is discussed and compared with the use of the method in the practice of the study. It appeared that the method could be used and a sample was formed, although it could not be fully determined if this was truly random. However, a considerable gap between snowball sampling in theory and in practice was found. Two recommendations were provided to bring theory and practice more in line.

Section three focuses on problems with drug use and the accompanying medical, employment, judicial, social and mental complex of problems. In this section the research questions were answered by means of Addiction Severity Index (ASI^R) data. **Chapter 3.1** presents information at item level of the ASI^R. Profiles of heroin addicts in the different treatment conditions were formed. Differences appeared to be most clear between on the one hand the methadone group and the group outside of treatment and on the other hand the detox and TC group. **Chapter 3.2** describes the differences between the groups at an overall level (severity rating of the ASI^R) and discusses differences in need for help and the help-seeking process. It was concluded that the group outside of treatment reported less problems with drugs compared to the methadone group, but more concern and need for help with family problems, occupational functioning and physical health. The inpatient group was characterized by more social and psychological problems compared to the group outside of treatment and greater concern and need for help in these life areas. Discriminant analyses showed that the most important reason for asking professional help is feeling concerned about drug problems. It is remarkable that legal problems did not emerge as a discriminator between the groups. Psychological and social problems appeared to motivate heroin users to ask for clinical treatment. In **chapter 3.3** differences in long-term variables (drug use career, treatment history and socio-demographic characteristics) are described. It appeared that in several respects differences between the group outside of treatment and the TC group were largest. Younger addicts more often seek long-term inpatient treatment, while older addicts seek less inpatient help (demographic). Older addicts were more often found outside of treatment and in the methadone programme. Those applying for TC treatment had been using more different types of drugs than respondents outside of treatment (drug use career). The group outside of treatment reported least treatment experiences, although this may be influenced by the inclusion criteria (treatment history). The TC group showed the most intensive and varied treatment history in the sense of most treatment periods in most types of treatment.

Section 4 determines the mental problems more in detail. Information was used of the Composite International Diagnostic Interview. In **chapter 4.1** prevalences of DSM-III-R

classifications are presented for the study groups and for the total group. Prevalences of psychopathology were higher for all disorders in the opiate-addicted sample (total group) than in the general population. The most prevalent (recent) Axis I disorders were: alcohol disorders (58%), social phobias (30%) and major depression (23%). ASP disorder was reported by 33% of the respondents. In the study groups it appeared that more respondents of the inpatient group reported psychiatric disorders compared with the other groups. Major depression was more often mentioned, as well as alcohol disorders and ASP disorder. The respondents outside of treatment more often reported a simple phobia. Respondents who applied for the methadone programme reported least psychiatric problems. **Chapter 4.2** focuses on the relation between severity of psychopathology on the one hand and drug use career and psychiatric history on the other hand. The categories were formed according to Woody's work: opiate addicts with no psychopathology, opiate addicts with an additional Axis I disorder and opiate addicts with ASP disorder (and sometimes Axis I disorders). Differences in drug use career were found between the groups. Respondents with severe psychopathology reported the largest number of drugs used. Furthermore an attempt was made to analyse if psychopathology appeared before or simultaneous with the addiction. Results with respect to primary or secondary occurrence of psychiatric disorders showed that opiate addiction both as a primary and as a secondary disorder was represented more or less equally for alcohol, schizophrenia and other disorders. Social and simple phobias showed another pattern. These disorders started before dependency.
The aim of **chapter 4.3** is to describe to what extent the psychiatry life area of the ASI^{R} reflects DSM-III-R disorders, assessed with the Composite International Diagnostic Interview (CIDI). The results indicate that the psychiatry life area of the ASI^{R} detects part of the psychopathology cases, but also misses out on a substantial number. For instance at item level, 18.7% of respondents with lifetime depression were missed out and 34.3% of respondents with lifetime anxiety disorders. Also at the severity rating level, about 35% of respondents with anxiety, affective or schizophrenic disorders were missed out at a cut-off level of 5. Although the ASI was not originally meant to be used as a screening instrument for psychopathology, it has been used for this purpose in practice. The data argued that it should not be used as such. Researchers and clinicians should use additional diagnostic tools to assess psychopathology.

Section 5 presents results of the qualitative analyses. In **chapter 5.1** was described if heroin addicts portray themselves as victims of forces beyond their control (downward spiral) and to what extent they do regard themselves as capable of managing their situation (controlled descent). It seems that they do both. On the one hand they reported negative effects of their heroin use which were beyond their control. Every respondent reported some kind of material, social and emotional losses. For these situations the image of a downward spiral was an appropriate metaphor. On the other hand, respondents also showed different types of self-regulating behaviour for which the image of controlled descent was an appropriate metaphor. Although moral values were not a central theme in the analysis originally, they became an important factor in understanding the mechanisms of self-control. It appeared that many of our respondents expressed their adherence to general norms in society and showed feelings of shame and guilt when they violated these norms in practice. The tension that raised from this discrepancy between accepted moral values and actual behaviour started off forms of self-control. **Chapter 5.2** addresses factors that were experienced by opiate addicts as stimuli or barriers to seek professional help. To this end exploratory analyses were carried out for 42 respondents. Information of two quantitative interviews and of one qualitative in-depth interview were combined at individual level. The results showed that the main stimulus was a cumulative effect of several problems that were consequences of drug use, as for instance loss of a house, job or spouse. Negative opinions appeared to be important with respect to help-seeking, therefore **chapter 5.3**

describes opinions of heroin users about methadone distribution. Despite the fact that methadone has been widely distributed in The Netherlands, it was noted that there were hardly any evaluation studies or effectiveness studies with regard to this type of treatment. This phenomenon, which applies not just to The Netherlands, might be linked to the various objectives of methadone programmes and, as a result, the complexity of an actual evaluation programme. Although this chapter did not provide a solution for the above-mentioned absence, it could contribute to the social and scientific discussion about methadone distribution. With respect to this programme, the central question was concerned with opinions and experiences of heroin users in The Hague with methadone distribution. Topics under discussion were, among other things: side-use, regulations, daily routine, counselling and ideal treatment. Information as to how heroin users experienced the use and distribution of methadone also seemed to be relevant in view of Dutch plans to set up an experiment with regard to heroin distribution.

8. Samenvatting

In **sectie 2** staan de opzet en methoden van het onderzoek centraal. In **hoofdstuk 2.1** wordt de opzet van het onderzoek besproken. Het doel van de studie was om de verschillen en overeenkomsten te bepalen tussen opiaatverslaafden binnen en buiten de drugshulpverlening. Op basis van deze vergelijking werd getracht te achterhalen welke factoren samenhangen met het hulpzoekgedrag van opiaat verslaafden. Voor het beantwoorden van de vragen werden verslaafden geïnterviewd in een methadonprogramma, in de klinisch detoxificatie centrum, in een drugvrije therapeutische gemeenschap en buiten de hulpverlening. De verschillende problemen werden in kaart gebracht door middel van twee gestandaardiseerde interviews. Met behulp van een kwalitatief diepte-interview werd de beleving van de problemen beschreven. In **hoofdstuk 2.2** wordt nauwkeurig beschreven hoe toegang is verkregen tot de subcultuur van heroïnegebruikers in Den Haag. Na een etnografische oriëntatie werden met behulp van de community fieldworker de eerste contacten gelegd. Verkregen informatie over de aanwezige netwerken van gebruikers werd vastgelegd op een 'kaart', die later gebruikt werd om na te gaan of zo veel mogelijk verschillende netwerken bereikt waren. Ingang tot deze netwerken werd verkregen via outreachwerkers, huiskamerprojecten, ontmoetingsplaatsen, op straat en via deal/gebruikers adressen. **Hoofdstuk 2.3**. Nadat toegang tot de doelgroep (buiten behandeling) was verkregen werd 'snowball sampling with nominee selection' gebruikt om een steekproef samen te stellen. Bij deze methode die vooral gebruikt wordt bij onderzoek naar 'hidden populations' werden respondenten geworven met behulp van eerder geïnterviewde respondenten. Over de kwaliteit van de aldus verkregen steekproef was nog weinig bekend. In dit hoofdstuk wordt de theorie van de methode beschreven en vergeleken met het toepassen ervan in de praktijk. Hierbij is gebleken dat een grote discrepantie bestaat tussen de theoretische uitgangspunten van de methode en de toepassing ervan in de praktijk. Tot slot worden enkele aanbevelingen gedaan om beide dichter bij elkaar te brengen.

In **sectie 3** staan problemen met druggebruik en problemen met gezondheid, werk, justitie en politie, sociale relaties en psychische klachten centraal. Met behulp van de gegevens van de ASI^R interviews wordt op de doelstelling en onderzoeksvragen ingegaan. In **hoofdstuk 3.1** werd informatie op item-niveau van de ASI^R gebruikt om profielen te schetsen van de vier onderzoeksgroepen. De grootste verschillen bleken te bestaan tussen de respondenten buiten behandeling en in de TG groep. In **hoofdstuk 3.2** worden de verschillen tussen de groepen beschreven op een globaler niveau (ernstschatting van de ASI^R) en tevens verschillen in hulpbehoefte. Ook wordt ingegaan op het hulpzoekproces. De detoxgroep en de TG groep waren inmiddels samengevoegd omdat uit het vorige hoofdstuk naar voren kwam dat er nauwelijks verschillende kenmerken tussen beide bestonden. De groep buiten behandeling rapporteerde minder problemen met drugs dan de methadongroep, maar wel meer last van en hulpbehoefte voor familie problemen, arbeid en fysieke gezondheid. De intramurale respondenten werden gekenmerkt door hogere ernstschattingen voor de sociale en psychische problemen en meldden ook meer last van en hulpbehoefte voor deze problemen. Discriminant analyses toonden aan dat de belangrijkste reden om hulp te vragen was het last hebben van problemen met druggebruik. Psychologische problemen en sociale problemen bleken respondenten te motiveren om intramurale hulp te zoeken. Problemen met werk, fysieke gezondheid en justitie bleken geen 'triggers' te zijn voor het zoeken van professionele hulp (methadonprogramma of intramuraal). In **hoofdstuk 2.3** worden verschillen in lange termijn variabelen (druggebruikcarrière, behandelgeschiedenis en demografische gegevens) beschreven. Uit de conclusies bleek dat de verschillen tussen de groep buiten behandeling en de TG groep het grootste zijn. Jonge respondenten (< 25 jaar) werden meer

geïnterviewd in de intramurale instellingen, terwijl oudere respondenten (> 35 jaar) vaker buiten behandeling werden gevonden (demografisch). Respondenten in de therapeutische gemeenschap hadden meer verschillende soorten drugs gebruikt dan respondenten buiten behandeling. De groep buiten behandeling rapporteerde minder behandelervaringen, terwijl de groep in de TG de meest intensieve en gevarieerde behandelgeschiedenis vertoonde, in termen van de meeste behandel episodes in de meeste typen van behandeling (behandelgeschiedenis).

In **sectie 4** worden de psychologische problemen meer in detail beschreven. Hiertoe wordt informatie van het Composite International Diagnostic Interview (CIDI) gebruikt. In **hoofdstuk 4.1** worden zowel psychopathologie prevalenties gepresenteerd voor de onderzoeksgroepen als voor de totale groep. Wat betreft de totale groep (N=344) bleken de prevalenties veel hoger te zijn voor opiaatverslaafden dan in de gewone bevolking. De meest voorkomende As I stoornissen onder opiaatverslaafden waren: alcohol misbruik/afhankelijkheid (58%), sociale fobieën (30%) en depressie in engere zin (23%). Antisociale persoonlijkheidsstoornis (ASP) werd gerapporteerd door 33% van de respondenten. Uit de vergelijkingen tussen de groepen blijkt dat de intramurale respondenten (detox of TG) vaker één of meer psychiatrische stoornissen meldden. Vooral depressie in engere zin, alcohol stoornissen en ASP kwamen vaker voor. Respondenten buiten behandeling werden vaker geclassificeerd voor een enkelvoudige fobie en bij respondenten in de methadongroep werden de minste stoornissen gemeten. In **hoofdstuk 4.2** staat de relatie tussen ernst van de psychopathologie enerzijds en druggebruikcarrière en psychiatrische geschiedenis anderzijds centraal. In navolging van Woody werden de respondenten verdeeld in drie categorieën. Tussen deze drie groepen zijn verschillen gevonden in de verslavingscarrière. Respondenten met zware psychopathologie hadden meer verschillende soorten drugs gebruikt. Ook is een poging gedaan om na te gaan in hoeverre psychopathologie of verslavingsproblemen eerder werden ervaren. Uit deze analyses bleek dat psychiatrische problemen ongeveer even vaak eerder als later werden ervaren dan de verslavingsproblemen. Een uitzondering hierop vertonen de fobieën. Deze begonnen veel vaker voor de verslavingsproblemen (van jongs af aan). De doelstelling van **hoofdstuk 4.3** is om na te gaan in hoeverre de data van het ASI^{R} leefgebied psychologische klachten en de data van de CIDI overeenkomen. Hierbij zijn de CIDI gegevens als gouden standaard genomen, aangezien dit instrument veel uitgebreider is en leidt tot DSM-III-R classificaties. Van de ASI werd in de praktijk de ernstschatting wel gebruikt om te screenen op psychopathologie en in onderzoek werd wel de samengestelde score gebruikt voor een dergelijke screening. Uitgaande van afkappunten op deze (dimensionale) maten, bleek dat het psychiatrie leefgebied van de ASI wel veel respondenten met psychopathologie vond, maar een aanzienlijk aantal respondenten 'mistte', die door de CIDI wel werden geclassificeerd voor psychopathologie. Bijvoorbeeld op itemniveau werd 18.7% van de respondenten, die ooit depressief waren, gemist en 34.3% van de respondenten, die ooit last van extreme angsten hadden. Ook op het niveau van de ernstschatting bleek ongeveer 35% van de respondenten met angst-, affectieve of schizofrene stoornissen gemist te worden, bij een afkappunt van 5 (ernstschatting). Hoewel de ASI een degelijk instrument is, dat nooit bedoeld is geweest voor het screenen van psychopathologie, blijkt nu dat het daar ook niet voor gebruikt kan worden. Onderzoekers en behandelaars, die wel de ASI gebruiken om eventuele psychopathologie bij verslaafden te onderkennen, zullen andere diagnostische instrumenten toe moeten voegen aan hun procedure.

In **sectie 5** worden de resultaten van de kwalitatieve analyses gepresenteerd. Het procesmatige verloop van verslaving en hulpzoekgedrag wordt beschreven. In **hoofdstuk 5.1** wordt beschreven of heroïneverslaafden zichzelf afschilderen als slachtoffers van een oncontroleerbaar afglijdingsproces of dat ze zich in staat zien om hun eigen situatie te reguleren. Uit de conclusies bleek dat beide visies voorkomen. Enerzijds werden er

negatieve effecten van het druggebruik gemeld, die als oncontroleerbaar werden ervaren. Diverse verliezen op materieel, sociaal en emotioneel gebied kwamen in bijna elk verhaal naar voren. Anderzijds werden door de respondenten verschillende soorten regulerende gedragingen besproken. Hoewel het morele gedrag van de respondenten geen thema was in de kwalitatieve analyses bleken normen een belangrijke factor te zijn om tot begrip van zelfregulerend gedrag te komen. Het bleek dat veel van de respondenten algemeen maatschappelijk aanvaarde normen en waarden aanhingen en schuld en schaamte vertoonden wanneer zij deze normen overtraden. De spanning die voortkomt uit de discrepantie tussen geaccepteerde normen en feitelijk gedrag kan als trigger werken voor zelfregulerende activiteiten. In **hoofdstuk 5.2** werden factoren gezocht die bevorderend of remmend werken bij het ontstaan van de vraag naar professionele hulp. Hierin was inzicht verkregen door eerst een model op te stellen aan de hand van factoren die in de literatuur werden genoemd. Vervolgens werden exploratieve analyses uitgevoerd op gecombineerde kwalitatieve en kwantitatieve gegevens van 42 respondenten. Per respondent werd de invloed van de factoren nagegaan. De resultaten toonden dat de belangrijkste motivatie om behandeling te vragen een cumulatief effect was van verschillende negatieve consequenties van het druggebruik, zoals bijvoorbeeld verlies van huisvesting, werk en partner. Ook de subjectieve ervaring van problemen met druggebruik als ernstig en de invloed van niet gebruikende 'belangrijke naasten' waren triggers. Barrières bij het ontwikkelen van de hulpvraag waren het druggebruik ervaren als niet ernstig en controle ervaren over het gebruik. Ook angsten voor behandeling en negatieve meningen over behandeling speelden hierbij een rol. Bij het in kaart brengen van de meningen over de drugshulpverlening, bleek het methadonprogramma veelbesproken te zijn. Daarom wordt hier in **hoofdstuk 5.3** nader op ingegaan. Methadonprogramma's komen veel in Nederland voor, echter er zijn opvallend weinig evaluatie-studies gedaan. Mogelijk hangt dit verschijnsel samen met de diverse doelstellingen die binnen de programma's gehanteerd worden. Dit hoofdstuk is geen oplossing voor het gebrek aan effectiviteitsstudies, maar kan wel bijdragen aan de maatschappelijke en wetenschappelijke discussie over methadonverstrekking. De meningen van heroïneverslaafden en hun ervaringen met het programma stonden centraal. Er werd gesproken over bijgebruik, regels van het programma, hulpverleners en hoe het ideale programma eruit zou moeten zien. Deze informatie is met name nu interessant, nu er plannen zijn voor een heroïneverstrekkingsexperiment.

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Curriculum vitae

Anne Eland-Goossensen werd geboren op 23 mei 1966 te Zwolle. Het V.W.O. diploma werd gehaald op de Dalton scholengemeenschap te Den Haag. Na een jaar in het buitenland te zijn geweest en twee jaar op de Academie voor Expressie door Woord en Gebaar begon ze in 1988 met de studie psychologie aan de Universiteit van Utrecht. Deze studie is begonnen met een cum laude propodeuse en werd afgerond met een scriptie en afstudeeronderzoek in de verslavingszorg, onder begeleiding van Goof van de Wijngaart (1992). De stageperiode vond plaats op de detoxificatieboerderij van Arta, een antroposofische instelling voor hulpverlening aan verslaafden. Direct daarop werd ze werkzaam als A.I.O. bij het Instituut voor Verslavingsonderzoek. Gedurende vier jaar werkte ze aan het promotieonderzoek, waarvan het resultaat voor u ligt. Drie dagen na de afronding van het concept proefschrift werd de tweeling Floris en Jerom Eland geboren, waarmee ze haar handen al enige tijd vol heeft.