

Opiate Addicts' Attitudes Towards Heroin Prescription

Norbert Scherbaum^{*,1} and Fred Rist²

¹Addiction Research Group at the Department of Psychiatry and Psychotherapy, LVR-Hospital Essen, University of Duisburg-Essen, Virchowstr. 174, D-45147 Essen, Germany

²Westfälische Wilhelms-Universität Münster, Psychologisches Institut I, Fliegenerstraße 21, D-48149 Münster, Germany

Abstract: *Introduction:* The competence of opiate addicts to give a valid consent to heroin prescription (HP) has been doubted in principle under the assumption that the pathological urge to use heroin would prevent them from reasonably weighing the pros and cons of HP. This study was done to test whether opiate addicts have a differentiated attitude towards HP which would be a basis for an individual decision to take part in HP.

Methods: Opiate addicts were asked to voluntarily and anonymously fill out a questionnaire containing 18 statements pro or contra HP at various health care facilities. There was one question about their willingness to participate in HP.

Results: 277 questionnaires were analyzed (methadone maintenance clinics [MMT] 44%, counseling offices 30%, low-threshold institutions 26%). 56% of all clients wanted to take part in HP. 56% of the clients currently in MMT, but only 20% of the clients in the low threshold services rejected HP. Those who declined saw their chance to achieve abstinence reduced in HP compared to MMT. Patients who accepted endorsed statements such as not being able to abstain from the heroin "kick". Four of these statements predicted the HP decision in a binary logistic regression model, yielding a rate of 78% correct classifications.

Discussion: The attitudes of opiate addicts towards HP cannot be reduced to unanimous and inconsiderate acceptance of HP, as rejections are frequent. Attitudes towards HP appear to be based on an individual evaluation of pros and cons, therefore, the consent of opiate addicts to HP should not be considered generally invalid.

Keywords: Opiate addiction, heroin prescription, autonomy, consent.

INTRODUCTION

The basic principles of medical ethics according to Beauchamp & Childress [1] are respect for the autonomy of the individual patient, concern for their well-being, and fairness regarding the allocation of resources in the health care system. Respect for autonomy means that every individual has the right to self-governance, even if a chosen action "involves serious risk and even if others consider it to be foolish" [1, p. 62]. Contingent on the respect for their autonomy, carrying out diagnostic procedures and medical treatment requires the consent of each patient. The competence of the patient to take a decision for or against a medical measure is taken for granted as far as the opposite is not proven, and does not depend on a preceding proof of specific intellectual capacities for reasoning. There must be severe problems, e.g. loss of consciousness, dementia or delusions, to doubt the competence of a patient to take a valid decision.

Heroin prescription (HP) is conceptualized as a treatment for severely ill opiate addicts who are unable or unwilling to participate in conventional treatment such as maintenance treatment or abstinence-oriented treatment. There has been

no generally accepted definition of a critical threshold of severity of opiate addiction up to now. According to the discussion on the goals of heroin prescription [2, 3], important aspects for the identification of a severely ill opiate addict are comorbid somatic diseases (e.g. AIDS, hepatitis B and C), comorbid mental disorders (e.g. schizophrenia), severe social problems (e.g. homelessness, long-term unemployment, repeated sentences), as well as lack of success of previous conventional treatment of addiction. Heroin prescription is proposed as an additional treatment for this group.

Heroin prescription treatment mainly consists of the application of pharmaceutical heroin under supervision in an out-patient clinic as well as of additional psychosocial support and treatment of comorbid mental disorders and somatic diseases. According to randomized controlled studies from Canada [4], Germany [5], the Netherlands [6], Spain [7], Switzerland [8], and the United Kingdom [9; see also review: [2]), heroin prescription is more successful than methadone maintenance treatment for severely ill opiate addicts. Success in these studies is defined taking into account complex outcome criteria covering especially drug consumption and physical health. HP is also associated with slightly more medication-related serious adverse effects of medication such as overdose or seizures than methadone maintenance treatment [2].

*Address correspondence to this author at the LVR-Hospital Essen, Department of Addictive Behaviour and Addiction Medicine, University of Duisburg-Essen, Virchowstr. 174, D-45147 Essen, Germany; Tel/Fax: 49 (0) 201 7227 180/254; E-mail: norbert.scherbaum@uni-due.de

Aside from the scientific debate about the evidence for the efficacy of heroin prescription, there is a debate concerning whether it is ethically appropriate to prescribe heroin to heroin addicts. In this ethical dispute the competence of opiate addicted patients regarding their decision to participate in heroin prescription was challenged by the assertion that opiate addicts have a distorted evaluation of heroin use and therefore have a pathological bias in favor of heroin prescription. This view has been advanced academically by Charland [10], but was also driving a widespread public debate. The diagnostic definition (ICD-10; DSM IV) is that opiate addicts suffer from a pathological and often irresistible craving for heroin as a core symptom of their disease. According to neurobiological theories of addiction, the long-term use of drugs leads to changes in the function of specific brain areas (e.g. prefrontal cortex, nucleus accumbens) with the consequence of a bias of perception towards drug-related stimuli, a bias towards installing drug seeking and drug use behavior as response to drug-related stimuli, and a reduced capacity to inhibit the exertion of these actions [11, 12].

The assertion of Charland, however, is not undisputed. Several authors [13-17] stated that the decision-making capacity of opiate addicts might be impaired, but is not in principle, and especially not in every opiate addict, completely eliminated. The assertion of an eliminated capacity in decision-making was seen as an exaggeration of the nature of addiction, perhaps driven by a careless use of metaphors such as the "hijacked brain" as the biological basis of addictive behavior. In contrast, these authors assumed that both the competences involved in decision making and vice versa compulsive behavior vary along a sliding scale. They emphasized that addicts often try to achieve other goals such as child-rearing and staying healthy and not always to abuse heroin. Addicts also show behavior according to complex schemes and strategies, e.g. in the context of entering treatment or illegal activities. The responsibility of opiate addicts for their behavior is also generally assumed in accordance to the law.

In the case of heroin prescription the substance is offered by a public and licensed institution, considerably easier to obtain than street heroin and less expensive. According to Charland [10] the decision of an opiate addict to participate in heroin prescription might be considered to be driven exclusively by his pathological urge to consume heroin, overriding any rational deliberation which normally would be expected to precede and prepare such a decision. In contrast, key features of a competent decision making are understanding the relevant information, appreciation of the treatment options in respect to the situation of the individual patient, and achieving a decision consistent with one's own premises [18, 19].

Based on the assertion of Charland regarding the decision process of heroin addicts, one would predict that the vast majority of heroin addicts would not hesitate to participate in heroin prescription. Consequently, this decision does not result from systematically weighing different positive and negative aspects of heroin prescription treatment. If the urge to consume heroin indeed overruled any reasoning, this is a situation clearly in conflict with the notion of the autonomous patient. None of the controlled trials have been

accompanied by attempts to elucidate the decision-making processes preceding the participation in these studies, thus the presentation of the dilemma created by the juxtaposition of personal autonomy and an overwhelming urge to consume heroin [10] as well as the numerous commentaries of this exposition could not rely on more than diagnostic considerations, anecdotal evidence and general clinical reasoning.

This study was carried out in order to elucidate the evaluation of heroin prescription by opiate addicts, especially their reasoning process in regard to the pros and cons of HP in relation to their willingness to participate in HP. A sample of heroin addicts was asked in a questionnaire if they personally were willing to take part in HP. They also judged a number of statements concerning possible advantages and disadvantages of HP to be true or false. This will yield an estimate of the proportion of addicts who would opt for HP: according to the named hypothesis, this should be the vast majority. We will then compare addicts who opt for HP with addicts who opt against HP on several indicators of the severity of heroin dependence: if they act according to the craving hypothesis, those opting for HP should be more severely addicted than those not taking part. We will proceed to investigate the relationship between the addict's position on the questionnaire (statements pro and con HP) and their decision to take part in HP. According to the craving hypothesis, the decision to take part in HP would not appear systematically related to statements about advantages and disadvantages of HP. We will: a) test the association of each of the pro and con statements with the HP decision and b) check if there is a subset of statements which predict the HP decision. Variability in the decision for HP, and especially substantial associations between pro and con statements and the HP decision would speak against the idea that addicts do not rationally arrive at their decision to take part in HP.

METHODS

Recruitment

The study was carried out in Essen, Germany, a city with 600,000 inhabitants and an estimated number of 3,000 opiate addicts. At the time of this investigation a differentiated treatment system for opiate addicts was provided. This comprised four maintenance clinics for a total of about 300 patients, maintenance treatment at offices of general practitioners for further 300 patients, an inpatient detoxification unit, a day clinic, and two units for long-term residential treatment. There were low-threshold services such as a needle-exchange program, a coffee house, a mobile medical unit, and emergency shelters.

A survey of addicted heroin users in Essen was carried out in three different settings: a) at two outpatient maintenance clinics (in most cases maintenance treatment with methadone), b) at a counseling service associated with an inpatient detoxification ward which focuses on abstinence-oriented treatment, and c) at several low-threshold services, including a coffee house for drug addicts, and a needle exchange program. In the counseling service there was only one counseling session regarding abstinence-oriented treatment. A questionnaire was handed out to every consecutive opiate addict contacting the respective settings

over a period of three months. The addicts filled in the questionnaire anonymously. Participation was voluntary.

Participants

299 questionnaires could be analysed. N = 22 (7.4%) respondents did not answer the question concerning their participation in HP if available and were dropped from further analysis, leaving N = 277 questionnaires for analysis. There were 121 questionnaires filled in by patients in maintenance treatment, 82 by patients at the counseling service, and 74 by opiate addicts in the low-threshold institutions. We wanted to include addicts with various degrees of severity of addiction into the survey. The disadvantage of this strategy is that we cannot state the return rates precisely, as various different people in these different institutions were responsible for handling the questionnaires. The relationship between addict and institution is also informal at the counseling service and low-threshold institutions as there is no registration of individual contacts. According to the total number of questionnaires distributed in these institutions and to the reports by the persons in charge, we estimate the return rate in maintenance treatment to be about 80%, while the return rate at the counseling service and in the low threshold institutions may amount to no more than 30-50%.

Demographic and addiction related characteristics of the respondents are reported in Table 1. The mean age of the opiate addicts participating in the investigation was 32.0 (SD 6.5), the majority were male (70%), 68% reported to be out of work. Mean duration of dependence was 11 years (SD 6.5), injecting heroin was stated as route of heroin application by 61% of subjects, heroin smoking by 63%. A number of the addicts did not prefer one mode of consumption to the other. Fifty percent of the respondents had passed at least once through detoxification during the past two years, and 30% had previous experience with MMT (excluding current MMT episodes).

In addition to the description of the whole sample, Table 1 also depicts these variables separately for the three sources of recruitment. Significant differences between the respondents from these different sources were found for age (F (2,227) = 5.36; p = .005) and for duration of addiction (F (2,227) = 7.05; p = .001).

According to post hoc tests, addicts in methadone substitution were older than those from the low threshold institutions (p < .10) and those seen in the counseling sessions (p < .01). Addicts in maintenance treatment and from low-threshold services had an equal duration of dependence, and the duration was shorter for those seen in the counseling sessions (p < .01). Comparison of the other characteristics reported in Table 1 for differences between groups yielded significant differences for the percentage of patients detoxified during the preceding two years (chi² = 19.07; p < .001), with fewest patients detoxified among those in MMT (39%) and most among those seen in the counseling sessions (75%). Significant differences were also found for the percentage of patients previously in MMT (Chi² = 27.49; p < .001), with fewest patients (14%) among those in MMT and the most among those seen in the counseling sessions (47%). None of the other differences between groups reached significance (Chi² ≤ 4.15; p ≥ .12). The median number of months in MMT was 20 months for the MMT group, 12 months for those with previous MMT in the counseling group, and 28 months for those with previous MMT in the low threshold institutions. According to a Kruskal-Wallis one way ANOVA, these values were not significantly different (p = .83).

Survey Instrument

A questionnaire was developed, which the opiate addicts had to answer on their own. The content and wording were established following exploratory discussions both with opiate addicts who were currently using heroin and patients in maintenance treatment. In a pilot phase it was presented to 31 patients at the clinic to evaluate its completeness and comprehensibility. The questionnaire consisted of:

- a) basic sociodemographic and anamnestic variables such as age, sex, duration of opiate addiction, pattern of current drug use etc. We primarily used the respective items of the EuropASI [20], retaining their answer format. The EuropASI is the implementation of the Addiction Severity Index [21] in German and several other European languages. The ASI records important data regarding use of alcohol and drugs, somatic state, work situation and income, legal problems, social situation and mental state.

Table 1. Description of Respondents from the Three Different Sources Methadone Maintenance, Counseling Session, and Low Threshold Services

	Methadone Maintenance	Counseling Session	Low Threshold Services	Total
N	121	82	74	277
Males (%)	69	72	68	70
Age (years; M (SD))	33.3 (6.2)	30.4 (7.0)	31.4 (6.1)	32.0 (6.5)
Duration of dependence (years; M (SD))	11.9 (6.3)	8.7 (5.9)	12.0 (7.1)	11.0 (6.5)
Heroin injection (%)	62	57	76	61
Heroin smoking (%)	71	56	68	63
Detoxified during preceding 2 years (%)	39	75	50	50
Previously in MMT (%)	14*	47	40	31
Out of work (%)	71	63	73	68

*The current MMT episode is not taken into account.

- b) a list of 18 statements regarding heroin prescription, including comparisons between HP and methadone maintenance treatment. The respondents were asked whether they agree or not with the respective statements. Examples for pro-HP statements are: "HP will make it easier to distance oneself from the drug scene". "The use of other drugs will be reduced in HP". "Criminal activities will be reduced in HP". Other pro statements concerned the reduced risk of infection with hepatitis C and HIV in HP, and the ease of heroin detoxification compared with methadone detoxification. Examples for statements contra HP are: "The prognosis for abstinence is better in maintenance treatment than in HP". "Heroin prescription is a temporary measure to survive in difficult situations, not a therapy". A third set of statements regarded accompanying components of HP such as attending the outpatient clinic several times a day, regular drug urine screens, and regular physical examinations.
- c) The last question was whether or not he/she personally would take part in HP treatment, if this option were available.

A shortened version of this instrument was also distributed at the low threshold services in order to increase the response rate. This version used only the basic demographic information and the personal decision about HP. We believe the questionnaire had to be tailored as the addicts using these institutions are generally worse off with respect to general health and psychological constitution and are not inclined to answer a lengthy questionnaire. We thus collected 30 questionnaires of normal length and 44 abbreviated versions from these services.

Statistical Analysis

First, we will compare among the three settings the proportion of addicts who state that they would take part in HP if available. Second, the addicts opting for and against HP will be compared with respect to indicators of severity of addiction. Third, the association between the answers to specific pro and con statements and the acceptance of HP will be reported. Associations of binary variables will be tested for significance by χ^2 , the strength of the association will be reported by the phi coefficient. Fourth, a binary logistic regression model will be fitted, regressing the acceptance of HP on the endorsement of the pro and con statements. This model will use only those statements which were found to be significantly associated with acceptance of HP. Finally, the answers on the significant predictor statements will be transformed into a sum score to report the proportion of addicts who opt for HP in relation to the number of pro and con statements which they answered in the direction of the HP decision.

A problem throughout the analysis was the high proportion of missing values among the answers to the pro and con statements: 11% of respondents in the methadone outpatient clinics, 16% of those attending the counseling session, and 11% of those filling out the long version of the questionnaire distributed in the low threshold services had more than three missing answers to the 18 pro and con

statements. However, when conducting missing values analyses with the respective SPSS module, no systematic pattern of missing values was detected, and the portion of missing values per pro or con statement did not surpass 10%, with the exception of one statement (13%). Therefore subjects were not excluded from the analysis because of missing values. A certain lack of diligence in following the instructions to answer questionnaires must be tolerated in this population and excluding these respondents from the analysis might have biased the results. Therefore, we report the varying N for the analyses of association between pro and con statements and the acceptance of HP. We also repeat the binary logistic regression analysis including only those pro and con statements which contributed significantly to the prediction. All calculations were performed with SPSS Version 17.

RESULTS

Acceptance of HP

Overall, 56% of the addicts would like to take part in a HP prescription treatment if it were offered. Differentiated according to the three settings, 44% of the patients currently in maintenance treatment, 52% of the addicts attending the counseling session and 80% of those contacted at the low-threshold institutions would like to participate in HP themselves. To check for an association between anamnestic or sociodemographic characteristics and the HP decision, accepting and declining addicts were compared with respect to all the variables reported in Table 1. None of the comparisons yielded a significant difference ($p > 0.12$), with the exception of injection as the preferred route of heroin application ($\chi^2 = 3.57$; $p < .05$): 59% of those 148 addicts who stated injection as their mostly used mode of application opted for HP, compared to 41% of those not stating this preference. Although significant, this association is rather weak ($\phi = 0.15$) compared to the strength of the associations between the opinions and the acceptance of HP (cf. Table 1). Thus, addicts accepting and declining HP are not clearly differentiated on single indicators generally used to describe the severity of a heroin addiction.

Endorsements of Pro and Con statements

Table 2 reports the percentages of agreement with the statements regarding the pros and cons of heroin prescription differentiated by the two groups of opiate addicts personally willing or not to take part in HP. The two groups answered the questions differently, e.g. 75% of opiate addicts wanting to take part in HP agreed with the statement that in HP they would have less need to use other drugs, but only 29% of the addicts not wanting HP. Regarding the achievement of abstinence, 70% of addicts not wanting HP agreed with the statement that it is easier to develop abstinence in the course of maintenance treatment than in the course of heroin prescription, but only 34% of addicts wanting HP agreed with this statement. The next step was the calculation of the coefficient of contingency regarding the correlation of the agreement with specific statements pro and con HP and the personal willingness to take part in HP. As reported in Table 2, these associations were highly significant for 15 out of 18 statements.

Table 2. Individual Acceptance of Heroin Prescription and Rate of Endorsement of Statements Pro and Contra Heroin Prescription (N = 233), Rank Ordered According to their Association with Individual HP Acceptance

Item No. ¹	Item Content ²	HP Rejected (N=117)	HP Accepted (N=116)	N ³	phi
		True (%)	True (%)		
07	With HP education and work would be easier for me	33	81	223 (96 %)	.44***
11	With HP I would use less other drugs	29	75	214 (91 %)	.41***
10	With HP it would be easier for me to leave the drug scene	34	78	218 (93 %)	.39***
18	With HP it would be easier for me to begin detoxification than with MMT	32	75	215 (92 %)	.38***
01	HP should be available for addicts	55	90	225 (96 %)	.37***
15	With HP I would have less illegal activities	62	94	220 (94 %)	.36***
13	Developing abstinence is easier in MMT than with HP	70	34	203 (87 %)	-.33***
08	With HP I would have more friends	7	36	218 (93 %)	.33***
09	I cannot forgo the daily kick	12	44	211 (90 %)	.32***
16	With HP I would be protected against infectious diseases	67	93	224 (96 %)	.30***
03	With HP my chances to become abstinent would be reduced	59	29	221 (94 %)	-.29***
12	HP is just harm reduction, not a treatment	26	56	210 (90 %)	.29***
17	If I had to choose I would prefer MMT to HP	67	38	214 (91 %)	-.28***
04	In HP I would go to the office several times a day	46	72	221 (94 %)	.24***
02	I consider regular talks with a physician as belonging to HP	79	94	217 (93 %)	.19**
14	I can achieve an abstinent life	7	15	219 (94 %)	.12
06	I consider regular physical examinations as belonging to HP	88	91	224 (96 %)	-.04
05	I consider drug screens as belonging to HP	84	81	218 (93 %)	.03

¹Item number referring to the original position of the item.

²Condensed reproduction.

³Number of valid answers.

***p < 0.001, ** p < 0.01, * p < 0.05.

Prediction of Personal Acceptance of HP

Those 15 of the 18 pro and con statements which were significantly associated with the personal acceptance of HP (phi between 0.19 and 0.44, see Table 2) were entered simultaneously into a logistic binary regression analysis with acceptance of HP as the criterion variable. N = 150 (64%) observations had complete data for these variables and thus were included in this analysis. The model achieved a good fit (Nagelkerkes $R^2 = .57$; Hosmer-Lemeshow Test: $\chi^2 = 5.36$ (df = 8), $p = .72$) and predicted 83% of the personal acceptance decision correctly. Only four of the 15 statements contributed significantly to the prediction: "(1) HP should be available for addicts", "(3) with HP my chances to become abstinent would be reduced", "(7) with HP education and work would be easier for me", "(9) I cannot forgo the daily kick of heroin". Agreeing with statements 1, 7, and 9 was positively related with the decision for HP, agreeing with statement 3 negatively. Note that three of these four statements were individual-centered, asking the participants to evaluate the consequences of HP for their own lives.

We repeated the analysis retaining only these four variables, which allowed to include N = 200 (86%) of the respondents in the predictor analysis (Table 3). In this subsample, precisely 50% (N = 100) opted for HP. Again, the fit was good (Nagelkerkes $R^2 = .47$; Hosmer-Lemeshow

Test: $\chi^2 = .80$ (df = 7), $p = .99$). 73% of the HP rejections and 84% of the HP acceptance decision could be correctly predicted by the answers to these four statements (78% overall). Thus, the answers to these four statements allow a rather robust prediction of the individual HP decision: the regression model performs well even when we increase the sample size from 150 to 200 and when we dispense with the other variables which may have contributed to the prediction, albeit not significantly. According to the odds ratios stated in Table 3, agreeing with statements 1, 7, and 9, and disagreeing with statement 3, respectively increases the chances that HP will be accepted up to five times compared with answering these statements in the opposite direction.

To demonstrate the strength of the association between agreeing and disagreeing with these statements and the decision to take part in HP, the four predictors were summed up, reverse-scoring statement No. 3. This aggregation of the answers to the statements allows depicting the probability that respondents would opt for HP depending on whether they answer to none, to one, to two, to three or to all four statements in the direction of its association with the HP decision (see Fig. 1). Of those respondents answering none of the statements in the HP direction, only one opted for HP, while 21 rejected HP. Of those answering all four statements in the HP direction, 30 accepted HP while three voted against HP. Thus, the probability to opt for HP increases

Table 3. Final Binary Logistic Regression Model Predicting the Individual HP Decision with the Endorsement of Four Pro and Contra Statements (N = 200)

Item	Regression-Coefficient B	Standard Error	Wald Statistic	p-Value	Odds Ratio
01) HP should be available for addicts	1.52	0.46	10.65	.001	4.56
03) With HP my chances to become abstinent would be reduced	-0.99	0.37	6.95	.008	2.68
07) With HP education and work would be easier for me	1.56	0.37	17.36	.000	4.72
09) I cannot forgo the daily kick	1.62	0.45	13.18	.000	5.10
(Constant)	1.62	0.47	11.82	.001	

systematically with the number of positive aspects identified by the addicts.

DISCUSSION

This study was carried out in order to test whether opiate addicts act according to the stereotype that they consume heroin regardless of any further reasoning, or if the decision to take part in HP is based on opinions towards HP which are weighed against one another. There are several findings which do not support the view of a stereotyped attitude of opiate addicts towards HP. First, by far not all opiate addicts want to participate personally in HP, and only a minority of patients in maintenance treatment would like to be treated by heroin prescription. Also, addicts who opt for or against HP cannot be differentiated based on indicators of severity of addiction, such as duration of dependence, number of detoxifications, previous experience with MMT, nor sociodemographic information. There was only one characteristic directly related to heroin addiction, i.e. if the dominant route of administration was the injection of heroin. However, this feature was only weakly related to the HP decision and would not allow to predict this decision with

any degree of certainty. Second, the personal willingness to take part in HP was systematically associated with the opinions of the addicts concerning various statements regarding the pros and cons of HP. Fifteen out of 18 of these associations were significant ($p < .05$), varying in strength from $\phi = 0.19$ to $\phi = 0.44$, thus the association of any of the significant pro and con statements with the HP decision is clearly stronger than the association between injection as the preferred route of application and the HP decision. Third, the HP decision could be predicted from a combination of four of these pro and con statements, which reflect different aspects of personal reasoning about HP. The probability to opt for HP increases systematically with every of these pro and con statements which an addict answers in the direction of its association with the HP decision.

The results are indicators for a complex and comprehensible reasoning of the addicts regarding HP. Opiate addicts refusing HP were especially sceptical about their chances to become abstinent under HP. In addition, they were more sceptical than addicts wanting HP regarding the assumed advantages of HP such as a reduced use of other drugs or protection from infectious diseases. Regarding the

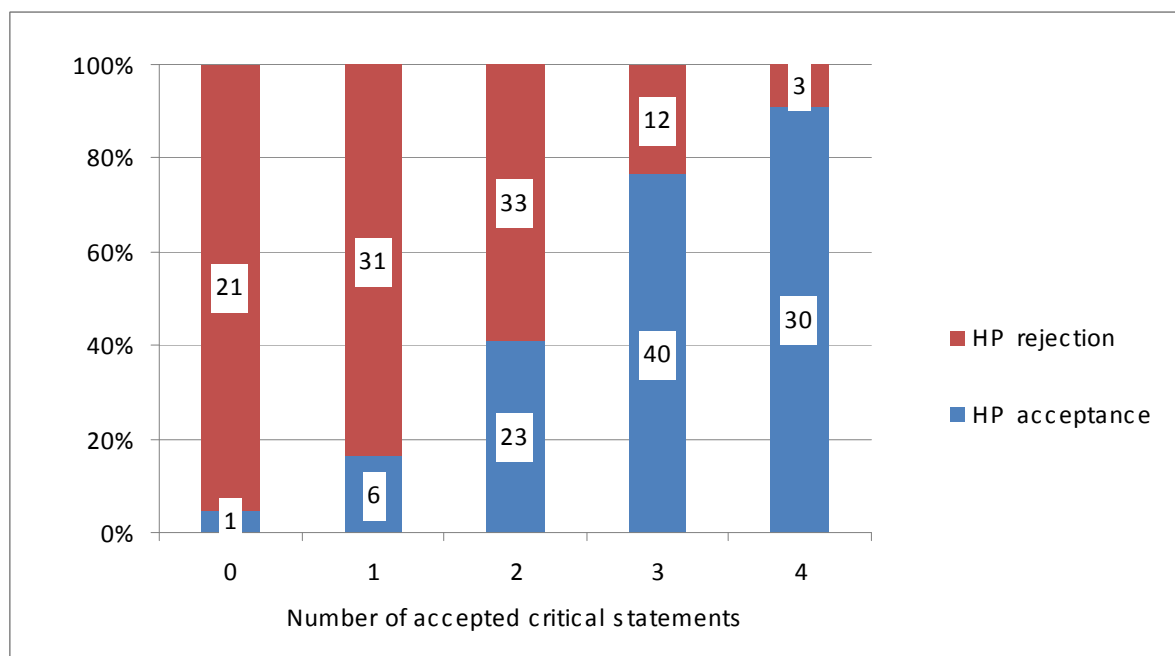


Fig. (1). Proportion of respondents opting for HP per number of accepted critical statements (N = 200). Data values of the columns reflect absolute numbers of respective respondents.

modalities of HP with treatment elements such as regular physical examination or regular drug screens, the two groups do not differ. There was a high acceptance of control measures during heroin prescription by the addicts in both groups.

The choices of patients in the context of heroin prescription have to be differentiated. At least three choices could be stated: the use of street heroin *vs* the use of prescribed heroin, the participation in heroin prescription *vs* participation in maintenance treatment, the participation in heroin prescription *vs* the participation in abstinence-oriented treatment [3]. In this study, supporters of heroin prescription stated that they could not forgo the "kick", i. e. the psychotropic effect of heroin. The choice in this case is between either taking heroin under heroin prescription conditions or taking street heroin. In this situation it is a plausible strategy of the addict to choose heroin prescription, as this promises protection from infection, distance from the drug scene, as well as the release from criminal behavior. This perspective encompasses the concept of harm reduction *via* heroin prescription. The hope of reducing the misuse of other drugs through heroin prescription can be explained by the wide-spread use of benzodiazepines as self-treatment for withdrawal symptoms when there is not enough heroin available [22]. With heroin prescription, heroin is available in consistent quality and amount. Detoxification from methadone after MMT is protracted compared with heroin detoxification due to the longer elimination half-life of methadone [23]. The reasoning that job rehabilitation is easier with heroin prescription is understandable within limits. Devoting several hours a day to the acquisition and use of heroin is not compatible with regular work or education, however attending a clinic several times per day also presents an obstacle to rehabilitation.

The majority of the participants in this study were currently in maintenance treatment. The majority of the maintenance patients rejected heroin prescription and were sceptical regarding the proposed advantages of heroin prescription. They saw heroin prescription only as a temporary measure, not as a long-term treatment of addiction. The reduction of heroin use is one of the most important aims of maintenance treatment. This aim is achieved by the majority of addicts, especially by those who stay longer than 3-6 months in treatment [24]. A return to (intravenous) heroin use, even under medical supervision, is not attractive to successfully treated maintenance patients.

Our data do not support the general assumption that opiate addicts cannot validly consent to heroin prescription. There is only a small amount of data available for comparison. In a Dutch study a third of opiate addicts currently in maintenance treatment were against HP, as they saw their possibilities for a development towards abstinence lower than in maintenance treatment [25]. In a Swiss trial a considerable proportion of patients in MMT did not switch to HP, even when offered a choice [8]. Opiate addicts can balance the pros and cons of heroin prescription and do not show a stereotyped answering in favor of a participation in HP associated with a one-sided affirmation of possible advantages of HP and a respective denial of disadvantages. More abstinence-oriented patients are not personally willing to take part in HP as an alternative to established treatments,

whereas harm reduction-oriented patients would like to participate in HP.

It must be addressed as to whether the investigated sample is representative of heroin addicts in general. Our sample consists of about 10% of the estimated 3,000 opiate addicts in Essen. The majority of addicts asked to participate in maintenance clinics responded to the questionnaire. Only assumptions are possible regarding the proportion of participants from the counseling service and from low-threshold institutions. Contacts with these clients are informal and usually anonymous. There is no list of clients. Most likely only a minority of those from low-threshold institutions were willing to be questioned. In order to enhance the chances to get their opinion on HP description for themselves, we had to use an abbreviated questionnaire which did not contain the pro and con statements, however it is doubtful whether the results regarding the possible participation in HP of the different groups of addicts would have been different had there been a greater number of participants from low-threshold institutions, as the general attitude of this group was – as expected – more in favor of HP than was found in MMT patients and in those attending the counseling session.

Eventually, it has to be stated that the problem of respect for autonomy is not the only problem discussed in the context of heroin prescription. Another problem refers to the above-named second principle of medical ethics that treatment should aim to improve the health of the individual. In the case of heroin prescription, apart from treatment aims for the addicted individual such as distancing oneself from the drug scene, advantages for the society are often proposed such as reduction of criminal activity or improving the image of inner-city zones. It is not always clear whether the advantages for the society are only most welcome consequences of a successful heroin prescription program which is carried out primarily to improve the health of opiate addicts, or whether heroin prescription is primarily proposed as a measure to reduce criminality and public nuisance with some possible advantages for the individuals. Considering the principle of nonmaleficence (*primum non nocere*) it is not allowed to harm an individual by a treatment, e.g. by reducing his chance to become abstinent, in order to achieve public advantages. However, the achievement of individual aims by heroin prescription is well proven, and an opposition between individual and public aims of HP cannot be generally assumed.

CONCLUSION

The prerequisite for valid consent of a patient to a medical procedure is the ability to understand the options under discussion, the ability to weigh them against each other, and to make an informed decision [26]. The question of their ability to give a valid consent to a procedure has to be answered by the doctor in each individual case. In the ethical debate of heroin prescription, however, the competence of drug addicts is generally doubted. The results of this study contradict this assumption. In contrast to expectations that most opiate addicts would accept heroin prescription, only 56% of the addicts in our study would be willing to participate. The investigated addicts were generally able to consider various arguments, therefore the

consent of opiate addicts to heroin prescription cannot simply be considered invalid. It is notable that the addicts in the low-threshold institutions showed a limited compliance in our investigation, although these were the target group for heroin prescription. These empirical data support the general assumption of a competence of patients to choose between different treatment options.

It has to be admitted that our study only investigated whether the responses of opiate addicts in a questionnaire correspond to the stereotype that addicts are irresistibly pulled towards the consumption of their substance of dependence, regardless of the circumstances. This was not the case. It cannot be excluded that the deliberation preceding the choice and implicating the evaluation of the specific pros and cons of HP was already biased by the addictive disorder, especially in the group of opiate addicts investigated in low-threshold institutions. In general, it seems to be easier to test whether a patient's choice of a treatment is consistent (meaning that the choice is in accordance with his evaluation of specific pros and cons of the treatment) than to test whether this primary appraisal is already biased by a mental disease. As we have no objective measure to test whether a deliberation is biased, we need to be careful to avoid value-laden judgments of competence: if a person does not choose a specific treatment, which someone else thinks he ought to choose, this does not mean that the person is irrational and unreasonable [1, p. 73]. It has to be addressed whether a general assumption of the incompetence of opiate addicts regarding heroin prescription is part of the stigmatization of this patient group.

ABBREVIATIONS

ASI	=	Addiction Severity Index
HP	=	Heroin prescription
MMT	=	Methadone maintenance treatment

REFERENCES

- Beauchamp TL, Childress JF. Principles of biomedical ethics. 4th ed. Oxford New York: Oxford University Press 1994.
- Blanken P, van den Brink W, Hendriks VM, *et al.* Heroin-assisted treatment in the Netherlands: history, findings, and international context. *Eur Neuropsychopharmacol* 2010; 20(Suppl 2): S105-S58.
- Scherbaum N, Beckmann JP, Klein S, Rehm J. Medizinethische Aspekte der ärztlichen Heroinverschreibung (Medical ethics of heroin prescription by physicians). *Nervenarzt* 2001; 72: 717-22.
- Oviedo-Joekes E, Brisette S, Marsh DC, *et al.* Diacetylmorphine vs methadone for the treatment of opiate addiction. *N Engl J Med* 2009; 361: 777-86.
- Haasen C, Verthein U, Degwitz P, Berger J, Krausz M, Naber D. Heroin-assisted treatment for opioid dependence: randomised controlled trial. *Br J Psychiatry* 2007; 191: 55-62.
- Van den Brink W, Hendriks VM, Blanken P, Koeter MW, van Zwieten BJ, van Ree JM. Medical prescription of heroin to treatment resistant heroin addicts: two randomised controlled trials. *BMJ* 2003; 327: 310-6.
- March JC, Oviedo-Joekes E, Perea-Milla E, Carrasco F. Controlled trial of prescribed heroin in the treatment of opioid addiction. *J Subst Abuse Treat* 2006; 31: 203-11.
- Perneger TV, Giner F, del Rio M, Mino A. Randomised trial of heroin maintenance programme for addicts who fail in conventional drug treatments. *BMJ* 1998; 317: 13-8.
- Strang J, Metrebian N, Lintzeris N, *et al.* Heroin on trial: the RIOTT randomised trial of supervised injectable heroin and injectable methadone as treatment for heroin addicts persistently failing in orthodox treatment. *Lancet* 2010 (in press).
- Charland LC. Cynthia's dilemma: consenting to heroin prescription. *Am J Bioeth* 2002; 2: 37-47.
- Goldstein RZ, Volkow ND. Drug addiction and its underlying neurobiological basis: neuroimaging evidence for the involvement of the frontal cortex. *Am J Psychiatry* 2002; 159: 1642-52.
- Robinson TE, Berridge KC. Review. The incentive sensitization theory of addiction: some current issues. *Philos Trans R Soc Lond B Biol Sci* 2008; 363: 3137-46.
- Carter A, Hall W. The issue of consent in research that administers drugs of addiction to addicted persons. *Acc Res* 2008; 15: 209-25.
- Freckleton I. Choice, rationality, and substance dependence. *Am J Bioeth* 2002; 2: 60-1.
- Ling W. Cynthia's Dilemma. *Am J Bioeth* 2002; 2: 55-6.
- Orr AS, Wynia MK. Ethics and heroin prescription: no more fuzzy goals. *Am J Bioeth* 2002; 2: 52-3.
- Perring C. Resisting the temptations of addiction rhetoric. *Am J Bioeth* 2002; 2: 51-2.
- Appelbaum PS, Grisso T. Assessing patients' capacities to consent to treatment. *N Engl J Med* 1988; 319: 1635-8.
- Dunn LB, Nowrangi MA, Palmer BW, Jeste DV, Saks ER. Assessing decisional capacity for clinical research or treatment: A review of instruments. *Am J Psychiatry* 2006; 163: 1323-34.
- Gsellhofer B, Fahrner EM, Platt J. European Addiction Severity Index. *EuropASI*. München: Institut für Therapieforschung 1993.
- McLellan AT, Luborsky L, O'Brien CP, Woody GE. An improved diagnostic instrument for substance abuse patients: The Addiction Severity Index. *J Nerv Ment Dis* 1980; 168: 26-33.
- Specka M, Scherbaum N. Ergebnisse der stationären Entzugsbehandlung von Benzodiazepinen bei Methadonsubstituierten (Outcomes of inpatient detoxification from benzodiazepines in methadone maintained patients). *Sucht* 2005; 51: 329-38.
- Collins ED, Kleber HD. Opioids: detoxification. In: Galanter M, Kleber HD, Eds. Textbook of substance abuse treatment. 3rd ed. Washington: American Psychiatric Press 2004; pp. 265-89.
- Schottenfeld RS. Opioids: maintenance treatment. In: Galanter M, Kleber HD, Eds. Textbook of substance abuse treatment. 3rd ed. Washington: American Psychiatric Press 2004; pp. 291-304.
- Mino A. Wissenschaftliche Literaturanalyse der kontrollierten Heroin-oder Morphinabgabe. Deutsche Zusammenfassung. (Scientific analysis of the literature concerning controlled dispensing of heroin or morphine). Bern: Bundesamt für Gesundheitswesen 1991.
- Illhardt FJ. Medizinische Ethik. (Medical ethics). Berlin Heidelberg New York: Springer 1985.

Received: July 31, 2009

Revised: May 17, 2010

Accepted: May 28, 2010

© Scherbaum and Rist; Licensee *Bentham Open*.

This is an open access article licensed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/3.0/>) which permits unrestricted, non-commercial use, distribution and reproduction in any medium, provided the work is properly cited.