

Diversion of Methadone and Buprenorphine from Opioid Substitution Treatment: the Importance of Patients' Attitudes and Norms

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Björn Johnson
Ph.D., Senior Lecturer
Department of Social Work
Malmö University
Phone: +46 70 438 39 73
Email: bjorn.johnson@mah.se

Torkel Richert
Ph.D.
Department of Social Work
Malmö University
Email: torkel.richert@mah.se

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Abstract

Aims

Methadone and buprenorphine diversion by patients in opioid substitution treatment (OST) is a poorly understood phenomenon. We study the norms and attitudes on diversion among OST patients, including the role these norms and attitudes play as diversion risk factors. We also study whether perceived quality of care, social bonds to treatment staff, and deterrence can be associated with diversion.

Methods

Structured interviews were conducted with 411 patients from eleven OST programs. In total, 280 interviews were done on site by the researchers, while 131 interviews were conducted through peer interviewing by specially trained patients. The data was analyzed through frequency- and averages-calculations, cross-tabulations, and logistic regression analysis.

Results

Most patients consider diversion as mostly positive (83.7%), morally right (76.8%), and without any significant risk of detection (66.9%). Individual differences in norms and risk perceptions may play a role in explaining variations in diversion; patients who consider it right to share medication with friends report higher treatment-episode diversion than other patients (OR 1.455, $p=0.016$). Patients who perceive control measures as effective report lower diversion than other patients (OR=0.655, $p=0.013$). Furthermore, data indicate that patients who are satisfied with the care and service are less prone to engage in diversion. Social bonds with treatment staff seem to be less importance.

Conclusions

The norm system described by patients resemble Bourgois' 'moral economy of sharing' concept—not sharing drugs with friends in withdrawal is considered unethical. Efforts to decrease diversion may focus on lifestyle-changing interventions, and reducing black market demand for illicit medications by expanding access to treatment.

Highlights

- We study the norms and attitudes on diversion among opioid substitution patients.
- Most patients see diversion as morally right and consider the risk of detection as low.
- Individual differences in norms may play a role in explaining variations in diversion.
- Patients who are satisfied with the care and service are less prone to engage in diversion.
- Efforts to decrease diversion may focus on reducing illicit demand and on lifestyle-changing interventions.

Diversion of Methadone and Buprenorphine from Opioid Substitution Treatment: the Importance of Patients' Attitudes and Norms

1 Introduction

Diversion of methadone and buprenorphine from opioid substitution treatment (OST) to the illicit drug market—the selling or sharing of medication by patients—is a controversial and poorly understood phenomenon. The aim of this article is to deepen the analysis of diversion by studying the norms in relation to and attitudes toward diversion among OST patients, including the role these norms and attitudes play as risk factors for diversion. We also study whether perceived quality of care, social bonds to treatment staff, and deterrence can be associated with diversion.

Moreover, we will investigate the patients' stated motives for selling or giving away medication. The analysis is based on hypotheses derived from Ajzen's theory of planned behavior (Ajzen 1991; Ajzen 2001) and social bonds theory. We will elaborate on this shortly, but first a brief review of previous research on diversion.

1.1 Previous Research on Diversion

The well-documented positive effects of OST—decreased mortality and morbidity, reduced criminality and illicit drug use (Mattick et al. 2008; Mattick et al. 2009; Amato et al. 2011)—have in several countries been vitiated by an increase in methadone- and buprenorphine-related fatalities among drug users outside treatment (Fugelstad et al. 2007; Strang et al. 2010; Bernard et al. 2012). However, research on diversion has been sparse, particularly when it comes to the supply side. Results from U.S., Australian, and British cross-sectional studies are

partly contradictory, although some patterns can be identified (Spunt et al. 1986; Winstock, Lea & Sheridan 2008; Winstock & Lea 2010; Dale-Perera, Goulão & Stöver 2012; Duffy & Baldwin 2012).

The risk of diversion appears to be higher for buprenorphine than for methadone (Winstock, Lea & Sheridan 2008; Winstock & Lea 2010). A higher degree of supervision has been associated with a reduced risk of diversion in a few studies (le-Perera, Goulão & Stöver 2012; Duffy & Baldwin 2012), while other studies showed no such connection (Spunt et al. 1986; Winstock, Lea & Sheridan 2008). Higher dosage levels have not been associated with any increased risk of diversion (Duffy & Baldwin 2012).

Few individual and social risk factors have been identified. An increased risk has been demonstrated for patients with experience of illicit use of the substances (Winstock, Lea & Sheridan 2008; Winstock & Lea 2010), as well as for patients who injected the prescribed substance during ongoing treatment (Winstock, Lea & Sheridan 2008).

In a previous article—based on a cross-sectional study of 411 OST-patients in Southern Sweden—we presented several new and significant findings (Johnson & Richert 2015). Through an innovative methodological strategy whereby we compared two methods of data gathering—researcher interviews and peer interviews (privileged access interviewing)—we were able to show that previous research, in all likelihood, has underestimated the extent of diversion activities. Self-reported diversion proved to be considerably higher in peer interviews than in researcher interviews. The number of patients who stated that they at some point had sold or shared was two to three times higher than in previous cross-sectional studies.

We were also able to point to several links and social risk factors which have not been identified in previous research. The likelihood of diversion was higher for patients on mono-buprenorphine than for methadone-patients. Current drug-use increased the risk of diversion,

as did mainly socializing with active drug users. Having had patients as the main source of illicit methadone or buprenorphine prior to treatment was another risk factor. No association was found between diversion and demographic factors (age, gender, country of birth, marital status, education), dose levels, or dispensing procedures.

1.2 Theory and Hypotheses

Previous research on diversion has been descriptive in nature and lacking a clear theoretical foundation. In this article, we examine two theoretical hypotheses.

Ajzen's *theory of planned behavior* is a psychological theory about the link between attitudes and behavior (Ajzen 1991; Ajzen 2001). According to this theory, intentional action is a function of three factors: (1) behavioral beliefs and attitude toward behavior, (2) normative beliefs and subjective norms, and (3) control beliefs and perceived behavioral control. In this context, attitude toward behavior 'reflects the individual's global positive or negative evaluations of performing a particular behavior', while subjective norms 'refer to the individual's perceptions of general social pressure to perform (or not to perform) the behavior' (Armitage & Conner 2001, p. 474). That is, if an individual perceives that a specific behavior has positive consequences (attitude toward behavior), if the behavior is supported by the norms prevailing among the individual's friends and in his/her social network (subjective norms), and if the individual considers the behavior as relatively easy to perform, or at least not presenting any major obstacles (perceived behavioral control), then this results in a high behavioral intention. The theory postulates that individuals with high behavioral intention are more likely to perform the behavior in question, which has been confirmed in several meta-studies.

Translated to our area: if diversion and illicit use of methadone and buprenorphine are primarily perceived as having positive consequences, if it is seen as ethically correct to sell or share with other drug users, and if the control measures of the program are seen as inefficient, then a high diversion intention will result. Our hypothesis is, therefore, that patients who strongly hold these types of opinions and attitudes are more prone to diversion.

The significance of social bonds for engaging in criminality or other deviant behavior has been the object of an extensive criminological debate since the 1960s, primarily among proponents of various forms of control theories. One major empirical result from this research is that weak social bonds to society is associated with increased risk of deviant behavior (Hirschi 1969; Hottfredson & Hirschi 1990; Sampson & Laub 1990). Social bonds and trustful relationships are crucial for the possibility of influencing people's attitudes and norms. In this way, social bonds is relevant to the theory of planned behavior, since behavior change requires changes in attitudes and norms. We want to examine the significance of social bonds to treatment staff for the risk of diversion. Our hypothesis is that patients with good relations to treatment staff are less likely to engage in diversion. In this context, we also propose the hypothesis that patients who are satisfied with the care and service in their programs are less likely to engage in diversion.

2 Methodology

2.1 Participants, Recruitment and Non-Participation

Structured interviews with a total of 411 OST patients were conducted between May and December of 2012. We recruited participants from eleven OST programs in five cities and towns in Southern Sweden. All participants had been enrolled in OST for at least four weeks. The participant group is described in Table 1.

We used two different data-gathering methods: on-site interviews (n=280) carried out by researchers and peer interviews (n=131) done by patients. The aim of this approach was to test the hypothesis that peer-interviewers, by virtue of being ‘insiders’ with personal experience of both drug use and treatment, would be able to obtain more honest and forthright answers to sensitive questions. As pointed out in the introduction, the results support this hypothesis, since the peer-interviewers consistently obtained higher levels of self-reported diversion than the researchers (Johnson & Richert 2015).

The researcher interviews were conducted in all five locations by Johnson, Richert, and three project assistants. One to two weeks before our arrival, posters were put up in the clinics. Written information and scheduling lists were left with a secretary. We then spent two to ten workdays at each program, carrying out scheduled interviews and recruiting additional participants among the visitors.

The peer interviews were done in the two largest cities and were carried out as ‘privileged-access interviewing’ (Griffiths et al. 1993, Kuebler & Hausser 1997, Elliot, Watson & Harries 2002) by nine specially trained patients (five women and four men). The peer interviewers were all stable in their recovery and had extensive networks in various patient populations. The interviews took place in various locations outside the programs—in cafes, homes, parks, etc.

Before the data-gathering phase started, both the peer interviewers and the project assistants underwent training in how to present the project and carry out the interviews. Johnson and Richert then maintained ongoing feedback sessions with the all interviewers.

Our 411 interviewees represented 40.8% of the total population of 1,006 individuals enrolled in the eleven OST programs. As a result of the recruitment procedures, it was not possible to conduct any advanced analysis of non-participation bias. At group level, however, we have gathered information about the number of patients, age, gender, type of medication, average

doses, and dispensing procedures from the programs (see Table 1). In our data, there are clear differences only in regard to dispensing procedures: patients who collected their medication five to seven times a week are over-represented (34.5% versus 21.4% in the population as a whole), and patients who collected it once a week or less frequently are under-represented (29.2% versus 42.8%).

2.2 Procedure

Before the interviews, we informed all interviewees, orally and in writing, about the project and its aims. We explained that the study was confidential, that participation would not affect their individual treatment, and that they were free to end the interview at any time if they preferred to do so. Participants were offered a gift voucher worth SEK 200 (about EUR 22) or a book, regardless of whether they completed the interview or not.

The interviews lasted 60 minutes on average. We followed a standardized questionnaire consisting of 106 close- and five open-ended questions which covered the following areas: demographic information, social situation, drug use (historical and current), experience of illicit use of OST medication, treatment experiences, views on their current OST, opinions on diversion and, finally, personal experience of diversion.

2.3 Analysis and Variables

The data was described through frequency- and averages-calculations, and cross-tabulations. Bi- and multivariate analyses were made with χ^2 test, t-text and logistic regression analysis. All analysis was performed with the SPSS version 20 for Windows.

As dependent variables in the analysis we used ‘diversion past month’ (DPM) and ‘diversion treatment episode’ (DTE), two variables which combine having sold, given away and/or

exchanged medication at least once in the past month, and having done so at least once during the entire treatment episode, respectively.

We used eight independent variables. In order to study the impact of norms, attitudes, and deterrence, we formulated three statements which the interviewees were asked to respond to. Views on the illicit market were measured with the statement 'Illicit methadone and buprenorphine [Subutex/Suboxone] save lives'. Norms regarding diversion of medication was measured with the statement 'Sharing your medication with a friend who is dope sick is the right thing to do.' Deterrence was measured with the statement 'The staff here at the clinic usually detect if someone is diverting their medication.' The response options were 'disagree,' 'partly disagree,' 'partly agree,' and 'agree,' which were given the values 1 through to 4.

In order to measure social bonds and patient satisfaction, we formulated 11 Likert-questions with responses on a scale of five, ranging from 1 (not at all) to 5 (to a great extent). The responses to these questions were initially studied through a factor analysis (principal component analysis, varimax with Kaiser normalization). This analysis pointed to two clear factors which we have interpreted as patient satisfaction and social bonds respectively. We then constructed two index variables which consist of four questions each.

The questions in the satisfaction index were: 1. How satisfied are you with the help you get from the treatment staff? 2. Do you feel that the staff care about you? 3. Do you think that the staff listens to your wishes? 4. Have you and the staff ever had different opinions about your treatment goals?

The questions in the social bonds index were: 1. Can you typically talk about anything you like with your contact? 2. Do you feel that your contact trusts you? 3. To what extent do you feel that your contact supports and encourages you? 4. Do you care what your contact thinks about you?

The reliability of the indices was measured with Cronbach's Alpha, which for the satisfaction index reached 0.796, and 0.825 for the social bonds index.

In our analysis, we have controlled for the social factors that we have previously (Johnson & Richert 2015) found to be associated with increased risk of diversion, that is, current illegal drug use, mainly socializing with active drug users, and having had patients as the primary source for illicit methadone or buprenorphine. These variables are dichotomous.

In the article we also present the motives for diversion as stated by the interviewees. The question read: 'When you sold or shared your dose, why did you do so?' Six different response options were given and the respondents could choose more than one.

2.4 Ethics

The project was conducted in accordance with The Swedish Ethical Review Act (SFS 2004:460). The design and execution of the project was approved by the Regional Ethical Review Board at Lund University.

3 Results

3.1 Norms, Attitudes, and Diversion: Bivariate Analysis

The distribution of responses for the five independent variables which measure attitudes and norms are presented in Table 2. A very large majority of interviewees agreed (33.1%) or partly agreed (50.6%) with the statement that illicit methadone and buprenorphine save lives. A large majority of interviewees agreed (36.6%) or partly agreed (40.2%) with the statement that it is the right thing to do to share with a friend who is 'dope sick'. A large majority

disagreed (30.3%) or partly disagreed (36.6%) with the statement that treatment staff usually detects diversion.

For the index variables the average score for social bonds was 13.77 (SD: 4.14) and for patient satisfaction 13.83 (SD: 4.02). Both indices have a minimum value of 4 and a maximum value of 20.

In Table 2, we also relate the seven variables to the dependent variables, DPM and DTE, in bivariate analyses. DPM is higher for patients who agreed with the statement that it is right to share with a 'dope sick' friend and lower for patients who said that staff often detects diversion (χ^2 test, $p < 0.001$). Patients who had engaged in diversion in the past month were less satisfied with their treatment (t -test, $p = 0.001$) and scored lower on the social bonds index (t -test, $p = 0.028$) than those who had not engaged in diversion.

Similar differences also emerge in relation to DTE, which is higher for patients who agree with the statement that it is right to share with a 'dope sick' friend and lower for patients who felt that staff usually detects diversion (χ^2 test, $p < 0.001$). Patients who had engaged in diversion during treatment were less satisfied with their treatment (t -test, $p < 0.001$) and scored lower on the social bonds index (t -test, $p = 0.006$) than those who had not engaged in diversion.

3.3 Norms, Attitudes, and Diversion: Multivariate Analysis including Social Factors

In Table 3 the independent variables are related to DPM and DTE through logistic regression. We have included the social factors which had previously been shown to be linked to DPM in the equation. In regard to DPM, the previously significant associations can no longer be found in the bivariate analysis. Higher risk can now only be observed for the social factors: patients as the primary source (OR 2.405; $p = 0.016$), illicit drug use in the past month (OR 2.201;

p=0.010), as well as mainly socializing with active drug users (OR 2.133; p=0.032).

Otherwise, there were no significant links.

For DTE, however, several of the associations from the bivariate analysis remain. DTE is higher for patients who agreed that it is right to share with a 'dope sick' friend (OR 1.455; p=0.018) and lower for patients who felt that staff usually detects diversion (OR 0.655; p=0.013). Patient satisfaction is also associated with DTE (OR 0.876; p=0.007). Among the social factors, the variable of patients as the primary source is associated with higher DTE (OR 2.040; p=0.013). No other significant associations could be established.

3.4 Self-reported Motives for Diversion

All interviewees (n=234) who reported having sold, shared, or exchanged their medication while in treatment were asked about their motives for doing so. Of these, 224 individuals (95.7%) stated at least one motive. 'To help a friend or partner' was the most common motive, given by 90.6%. 'Need of money' was stated by 41.1%, 'Didn't need the whole dose' by 14.3%, 'Didn't want to take the dose in order to get high on heroin' by 11.6%, 'Wanted to cut down on my own without telling the staff' by 10.3%, and 'Threatens or pressure' by 4.9%.

The relationship between stated motives and the independent variables was analyzed through cross-tabulations (χ^2 test) and calculations of averages (t -test). The motive 'Need of money' was more commonly given by persons who had used illicit drugs in the past month (χ^2 test, p<0.027). 'Didn't need the whole dose' was more commonly stated by individuals with other patients as their primary source (χ^2 test, p<0.004), and who did not socialize with active drug users (χ^2 test, p<0.006). Apart from this, there were no significant differences.

4 Discussion

A very large majority of our interviewees feel that illicit methadone and buprenorphine save lives. Both substances are seen as safer than heroin, although many of those we spoke to pointed out that methadone can also be fatal, if the user is inexperienced or careless. These opinions are confirmed by research on illicit use of methadone and buprenorphine which has shown that methadone and buprenorphine often are used by opiate-dependent individuals outside treatment (Vlahov et al. 2007; Davis & Johnson 2007; Håkansson et al. 2007; Schuman-Oliver et al. 2010). Common motives for this are to alleviate heroin withdrawal symptoms or drug cravings, or attempts at managing substitution treatment or performing self-detoxification on their own (Vlahov et al. 2007; Davis & Johnson 2007; Håkansson et al. 2007; Schuman-Oliver et al. 2010). Insufficient access to treatment, strict admission criteria, and involuntary discharges of patients who have broken program rules are other factors that can increase the demand on the illicit market (Schuman-Oliver et al. 2010; Svensson & Andersson 2012).

A great majority of interviewees also regard it as right to share one's medication with a 'dope sick' friend. This is corroborated by findings from ethnographic research. Researchers in this field have described how drug-users' subcultures often develop what anthropologist Philippe Bourgois has termed 'a moral economy of sharing'; a system of norms in which it is considered unethical to not share drugs with friends and acquaintances who are going through withdrawal (Bourgois 1998; Bourgois & Schonberg 2009; Havnes, Clausen & Middleton 2013). Such diversion can be grounded in empathy—the person sharing has personally experienced withdrawal and knows how sick one can feel—but can also be based on the recipient paying. That these motives are not mutually exclusive are hinted at by our interviewees stated motives for diversion. The altruistic motive of 'helping a friend or partner'

was given by more than 90% of interviewees, while more than 40% declared 'Need of money' as a reason.

The risk of detection when diverting was regarded as low by most interviewees. The significance of deterrence has featured prominently within several theoretical frameworks in the fields of criminology and criminal justice theory. One important conclusion drawn from this research is that the certainty of punishment acts as considerably stronger deterrence than the severity of the punishment itself (Apel 2013; Nagin 2013). The control within the OST-programs in our study can therefore hardly be seen as effective from a diversion prevention perspective.

From the theory of planned behavior the results we have discussed indicate that diversion should be seen as understandable and as something to be expected among OST patients (Ajzen 1991; Ajzen 2001). The phenomenon is seen as mostly having positive consequences, to be morally right, and to not be associated with any significant risk of detection. In all likelihood, this is an important partial explanation of the high rates of diversion we have previously demonstrated (Johnson & Richert 2015).

On an individual level, our bivariate analysis indicates that differences in norms as regards diversion and perceptions of risk of detection may play a certain role in explaining variations in diversion. When it comes to DTE, these differences remain even in the multivariate analysis. Looking at the whole treatment episode, patients who disagree with the statement that it is right to share and patients who perceive the control measures of the programs as effective have lower self-reported diversion than individuals who express the opposite view.

For DPM, however, these differences are no longer significant in the multivariate analysis, when we control for social factors. This indicates that these types of norms and perceptions are no determinants when it comes to distinguishing those patients who recently engaged in

diversion from other patients. Factors such as socializing, current drug use, and experience of having bought or having been given methadone or buprenorphine from OST patients are of greater significance.

Our hypothesis about patients with good relations to staff being less prone to engage in diversion is not supported by the analysis. This indicates that the social bond with treatment staff are of limited importance. The study instead points to other types of social bonds, such as to friends and acquaintances who ask for these drugs, being of greater importance.

On the other hand, there is some support for the hypothesis that patients who are satisfied with the care and service they receive are less prone to engage in diversion; satisfied patients have significantly lower DTE. Analyzing the responses in greater detail, we can see that this is probably connected to the fact that a smaller group of very satisfied patients (with a satisfaction index score of 17–20) display considerably lower DTE than other patients. There are many factors with a potential impact on patient satisfaction, but one possibility is that this group consists of patients who feel a high degree of solidarity with the program. More research is needed on this matter.

We would like to conclude by discussing a few possible policy implications from this study. Our findings indicate that non-medical use of diverted methadone and buprenorphine is generally seen as something positive by the patients, despite the risks associated with these substances. It is conceivable that information to patients about the risks—not only with regard to the immediate risk of overdosing by users with insufficient tolerance or by users combining the substances with sedatives or alcohol, but also about the risk of diversion undermining the legitimacy of the treatment method, bringing more severe controls and sanctions in its wake—could have some preventative effect.

Information, however, is rarely sufficient when it comes to changing norms and behaviors. It is more important to influence the social factors which lead to the increased risk of diversion. The most common motives for sharing or selling were to help a ‘dope sick’ friend and to make money. Initiatives that enable patients to build new networks of drug-free friends, could potentially help reduce the incentives for diversion, as might initiatives which provide opportunities for work and legal income.

Increased access to OST—through shortened waiting lists, relaxed admission criteria, and increased retention—could also be an effective measure, since it would reduce black market demand for methadone and buprenorphine. Measures to increase patient satisfaction, such as user revisions with a focus on the patients’ experiences of operations and respectful treatment, may also have some potential as diversion prevention (Richert & Johnson 2015).

To increase the general control measures in the programs is hardly a practicable option. Control measures in OST programs, in Sweden as well as in many other countries, already consume much time and resources, and many patients find them humiliating and restrictive (Petersson 2013). Sweden’s national guidelines (SOSFS 2009:27) require all patients to take their medication under supervision every day for the first six months of treatment. Urine tests are frequently taken and patients who test positive lose their take-home privileges. Despite this, most patients consider the risk of detection when diverting low.

For most patients diversion is something they engage in relatively infrequently (Johnson & Richert 2014)—they sell or give away a small part of the prescribed dose—which typically does not affect the person’s treatment. A more serious form of diversion is patients who systematically sell a large portion of their medication (Johnson & Richert 2014). To identify such patients is difficult, but increased use of targeted control initiatives when selling is suspected, for example through plasma concentration tests, would be one option.

Conclusion

We have studied the norms and attitudes on diversion among OST patients, and the importance of these norms and attitudes as risk factors for diversion. Most patients see diversion as morally right, and consider the risk of detection low. The norm system described by patients resemble what Bourgois' calls a 'moral economy of sharing'—not sharing drugs with 'dope sick' friends is considered unethical.

Individual differences in norms and attitudes may play a role in explaining variations in diversion. However, social factors such as current drug use, having had patients as the main source of illicit medication prior to treatment, and socializing with active drug users, seem to be more important, especially in cases of recent diversion activity. Patients who are satisfied with the care and service are less prone to engage in diversion.

To be effective, efforts to decrease diversion probably ought to focus on lifestyle-changing interventions, and reducing black market demand for illicit medications by expanding access to treatment.

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Table 1. Study sample and total population – a brief comparison.

Variable	Study sample (n=411)	Total population (n=1006)
Age, average (standard deviation)	39.4 (sd)	39.8
Gender (male)	74.7%	75.2%
Native country (Sweden)	81.0%	
Education		
Primary education (9 years), not completed	8.3%	
Primary education	39.2%	
High school	42.6%	
Higher education	10.0%	
Number of years of regular opiate-use (standard deviation)	9.9 (6.7)	
Medication		
Methadone	53.3%	51.5%
Mono-buprenorphine	27.3%	28.8%
Buprenorphine-naloxone	19.5%	19.7%
Average dosage, mg (standard deviation)		
Methadone	99.3 (28.9)	103.1
Mono-buprenorphine	19.0 (4.4)	19.44
Buprenorphine-naloxone	18.8 (5.1)	18.9
Previous OST	36.3%	
Length of treatment		
≤ 6 months	24.2%	
6–12 months	15.2%	
1–3 years	33.3%	
>3 years	27.4%	
Dispensing procedures		
5–7 days/week	34.5%	21.4%
2–4 days/week	36.3%	35.8%
1 day/week or more seldom	29.2%	42.8%
Have used any illicit drug in the past month	46.3%	
Primary socializing		
Alone	23.1%	
Family/friends without current drug issues	57.7%	
Family/friends with current drug issues	19.2%	
Have had patients as the main source for illicit methadone/buprenorphine	62.9%	

Table 2

Attitudes and norms in relation to diversion past month and diversion treatment episode.

Attitudes and norms	Diversion past month			Diversion treatment episode		
	Yes	No	Sign.	Yes	No	Sign.
Entire population (n=411)	24.1% (n=99)			56.9% (n=234)		
<u>Attitudes</u>						
Illicit medication saves lives (n=405)						
Agree (n=134; 33.1%)	26.1% (n=35)	73.9% (99)	0.608	55.2% (n=74)	44.8% (60)	0.424
Somewhat agree (n=205; 50.6%)	25.4% (n=52)	74.6% (153)		57.6 (n=118)	42.4% (87)	
Somewhat disagree (n=48; 11.9%)	18.8% (n=9)	81.2% (39)		66.7% (n=32)	33.3% (16)	
Disagree (n=18; 4.4%)	16.7% (n=3)	83.3% (15)		44.4% (n=8)	55.6% (10)	
<u>Norms</u>						
Sharing with a dope sick friend is the right thing to do (n=410)						
Agree (n=150; 36.6%)	32.0% (n=48)	68.0% (102)	0.000 ¶	64.7% (n=97)	35.3% (53)	0.000 ¶
Somewhat agree (n=165; 40.2%)	26.1% (n=43)	73.9% (122)		64.8% (n=107)	35.2% (58)	
Somewhat disagree (n=57; 13.9%)	8.8% (n=5)	91.2% (52)		35.1% (n=20)	64.9% (37)	
Disagree (n=38; 9.3%)	7.9% (n=3)	92.1% (35)		26.3% (n=10)	73.7% (28)	
<u>Deterrence</u>						
Staff usually detect diversion (n=350)						
Agree (n=13; 3.7%)	7.7% (n=1)	92.3% (12)	0.000 ¶	23.1% (n=3)	76.9% (10)	0.000 ¶
Somewhat agree (n=103; 29.4%)	13.6% (n=14)	86.4% (89)		42.7% (n=44)	57.3% (59)	
Somewhat disagree (n=128; 36.6%)	25.0% (n=32)	75.0% (96)		67.2% (n=86)	32.8% (42)	
Disagree (n=106; 30.3%)	38.7% (n=41)	61.3% (65)		67.0% (n=71)	33.0% (35)	
<u>Views about treatment</u>						
Social bonds index (n=389)						
Average value: 13.77 (standard deviation: 4.14)	12.97 (4.04)	14.04 (4.14)	0.028 †	13.28 (3.99)	14.43 (4.25)	0.006 ‡
Patient satisfaction index (n=391)						
Average value: 13.83 (standard deviation: 4.02)	12.61 (3.60)	14.22 (4.07)	0.001 ‡	13.00 (3.82)	14.95 (4.00)	0.000 °

¶ χ^2 -test, significant at $p < 0.001$ † t -test, significant at $p < 0.05$ ‡ t -test, significant at $p < 0.01$ ° t -test, significant at $p < 0.001$

Table 3

Logistic regression: attitudes and norms in relation to DPM

Variables in equation	OR	95% CI	Sign.
Saves lives	0.971	0.654–1.444	0.885
Right thing to do to share	1.400	0.948–2.067	0.091
Risk of detection	0.764	0.522–1.117	0.165
Social bonds	0.984	0.895–1.083	0.748
Patient satisfaction	0.914	0.829–1.008	0.073
Patient as main source	2.405	1.180–4.903	0.016 †
Current drug use	2.201	1.207–4.016	0.010 †
Socializing	2.133	1.066–4.271	0.032 †

Logistic regression: attitudes and norms in relation to DTE

Variables in equation	OR	95% CI	Sign.
Saves lives	0.821	0.584–1.154	0.257
Right thing to do to share	1.455	1.066–1.987	0.018 †
Risk of detection	0.655	0.469–0.914	0.013 †
Social bonds	1.017	0.928–1.114	0.719
Patient satisfaction	0.876	0.796–0.964	0.007 ‡
Patient as main source	2.040	1.165–3.572	0.013 †
Current drug use	1.644	0.978–2.832	0.060
Socialization	1.196	0.597–2.394	0.614

† Significant at $p < 0.05$ ‡ Significant at $p < 0.01$