

Uses of Diverted Methadone and Buprenorphine by Opioid-Addicted Individuals in Baltimore, Maryland

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Background

- Methadone and buprenorphine are highly effective in treating opioid withdrawal symptoms and reducing or eliminating heroin use; however, their availability has led to some diversion (Inciardi et al., 2007).
- In the 1970s methadone began to be misused as a euphoric agent when high-quality heroin became scarce (Agar & Reisinger, 2002). Once the heroin supply rebounded, researchers found that diverted methadone was most often used for self-medication for withdrawal or self-detoxification.
- More recently, the availability of buprenorphine treatment has led to some diversion, misuse, and overdose deaths when injected with benzodiazepines (Roux et al., 2008).

Specific Aims

To examine the uses of diverted methadone and buprenorphine among opiate-addicted individuals recruited from new admissions to methadone programs and from out-of-treatment individuals recruited from the street (Mitchell et al., 2009).

Methods

Participants:

- The quantitative sample ($N=515$) consisted of 351 participants who were entering methadone treatment and 164 who were neither enrolled in nor seeking treatment.
- The qualitative sub-sample ($n=22$) included 8 in-treatment and 14 out-of-treatment individuals.

Procedures:

- All participants were administered the Addiction Severity Index and the Friends Supplemental Questionnaire at baseline.
- Qualitative sample participants completed semi-structured interviews at treatment entry (baseline), 4-, 8-, and 12-months post-baseline. All interviews were recorded, transcribed, and entered into Atlas.ti qualitative coding software for analysis.

Analysis:

- Bivariate inferential analyses were used to compare street methadone users to non-users on demographic characteristics, lifetime and past 30 day drug use, and treatment history variables.
- Qualitative data were analyzed using grounded theory methodology based on a dictionary of prescribed codes, as well as emergent themes. A subset of transcripts were independently coded by two researchers who then met and reconciled any discrepancies. The research team was involved with the refinement of code categories and interpretation of analyses.

Survey Findings

Table 1. Drug use history, treatment history, and past 30 day drug use for participants with lifetime use of street methadone v. those without lifetime use of street methadone

Variable	Total sample (N = 515)	Users of street methadone (n = 84)	Non-users of street methadone (n = 431)
Lifetime			
<i>Mean years of use (SD)</i>			
Heroin	13.0 (7.7)	11.9 (6.7)	13.2 (7.8)
Cocaine	9.1 (8.1)	8.8 (7.8)	9.2 (8.2)
Street methadone	0.9 (3.0)	5.5 (5.3)	---
Other opiates / analgesics	1.0 (3.7)	1.3 (3.9)	0.9 (3.7)
<i>Mean age of first use (SD)</i>			
Heroin	21.7 (6.5)	22.3 (6.1)	21.6 (6.6)
Cocaine	23.6 (8.0)	23.4 (7.0)	23.6 (8.2)
Street methadone	33.3 (9.2)	32.5 (8.6)	33.6 (9.4)
Other opiates / analgesics	27.2 (10.4)	27.4 (9.9)	27.1 (10.5)
No. who have had methadone treatment (%)	254 (49.3%)	52 (61.9%)	202 (46.9%)*
No. who have had buprenorphine treatment (%)	71 (13.8%)	13 (15.5%)	58 (13.5%)
Number who have ever injected any drug (%)	316 (61.4%)	49 (58.3%)	267 (62.0%)
Past 30 days (adjusted for days in the community)			
<i>Mean days of use (SD)</i>			
Heroin	27.8 (6.7)	23.6 (11.4)	28.6 (5.0)*
Cocaine	12.8 (12.6)	8.9 (10.8)	13.5 (12.8)*
Street methadone	2.1 (5.5)	7.8 (10.3)	1.0 (2.8)*
Other opiates / analgesics	0.9 (3.8)	1.9 (6.0)	1.7 (3.1)*

*Note: Past 30-day items were adjusted for number of days spent in the community by dividing the number of days used by the number of days in the community and then multiplying by 30. Ns are as follows: age of first use of heroin ($n = 514$), age of first use of cocaine ($n = 497$), age of first use of street methadone ($n = 325$), and age of first use of other opiates/analgesics ($n = 155$). Differences are due to 1 non-street methadone user who reported never having used heroin, 17 non-street methadone users and 1 street methadone user who reported never having used cocaine, 190 non-street methadone users who reported never having used street methadone, and 304 non-street methadone users and 56 street methadone users who reported never having used other opiates/analgesics. Significant difference between the users and non-users of street methadone at $p < .01$

Conclusions

- Most of the methadone and buprenorphine obtained by our participants was used for self-medication of opioid addiction rather than for achieving euphoric effects and was taken in a manner consistent with these purposes.
- Familiarity with methadone and buprenorphine in treatment settings may enhance the receptivity to using these diverted medications on the street and vice versa.
- A variety of factors, including the ability and/or willingness to enter long-term treatment, may influence the decision to purchase and use diverted methadone or buprenorphine.
- Longitudinal and repeated cross-sectional studies may help to increase our understanding of issues such as the uses to which diverted medications are put in periods of high and low potency and availability of illicit opiates.

Drug Use:

- The two groups did not differ with respect to lifetime drug use practices or age at which they first tried drugs.
- The street methadone users reported significantly less heroin and cocaine use and significantly more street methadone and other opiate use in the past 30 days than did non-users.

Treatment History:

- Significantly more street methadone users than non-users reported prior drug treatment experiences.
- Street methadone users also reported significantly more lifetime methadone treatment than did non-users, but the groups did not differ with respect to prior buprenorphine treatment.

ASI Composite Scores:

- Street methadone users had significantly lower Drug Use composite scores than non users, indicating less serious current drug use problems for the street methadone group.
- The lifetime street methadone users reported being less troubled by drug problems in the past 30 days and felt that it was less important to obtain treatment for their drug problem than did non-users.

References

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Qualitative Findings

What is Being Purchased:

- Most participants reported purchasing liquid methadone; two reported using non-liquid methadone and said they preferred the non-liquid form.
- The use of diverted buprenorphine was reported by five people, all of whom reported using the sublingual tablets. Four of the participants who discussed using buprenorphine also discussed prior experiences using diverted methadone.
- No one in our sample mentioned injecting either methadone or buprenorphine.

Source

- Approximately half of the participants obtained diverted methadone from someone they personally knew on an MTP who either brought it directly to them or to the streets for re-sale.
- Buprenorphine was usually purchased off the streets, sometimes from an acquaintance but often identified as just a general street source.

- Buying from a known source was considered both a reliable and safe way to obtain methadone or buprenorphine on the street.

Cost:

- Most participants reported paying approximately \$20 for an 80 gm bottle, up to \$40 for a higher dose bottle. A 40 mg methadone diskette was reported to cost \$20.
- Buprenorphine was reported to cost \$5 a tablet.

Reason

- The two most common reasons for taking diverted methadone were avoidance of heroin or methadone withdrawal symptoms, and a desire to stop using heroin. Those who used street methadone to stop heroin use mentioned that they were either unable to enter a treatment program or unwilling to take methadone for prolonged periods of time.
- Those who used diverted buprenorphine either did so to avoid withdrawal symptoms, to "rest" from heroin use, or detox from heroin.

Dose

- The dosage levels, frequency, and duration of methadone and/or buprenorphine use reported supports the participants' claims that their aim was to detox or mitigate withdrawal symptoms: 30-40 mg of methadone/day; 4 mg buprenorphine/day.

Short-Term Effects

- Most reported that taking diverted methadone or buprenorphine was effective at reducing their heroin consumption and alleviating withdrawal symptoms.

Long-Term Outcomes

- Positive experiences with the use of diverted methadone or buprenorphine were sufficient to make some participants receptive to entering treatment.

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