Compliance with Buprenorphine-Medication Assisted Treatment Decreases Drug Use Among Opioid Addicts

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Background

- Opioid dependence results when people abuse legal or illegal opioids in increasing quantity and frequency, thereby developing a tolerance
- During recent years, there has been a steady increase in both the number of people who abuse and become dependent upon opioids (SAMHSA, 2007)
- Hundreds of millions of health care dollars are disbursed every year on untreated and under-treated opioid dependence (White et al., 2005; and Kaur et al. 2008)
- A significant problem for opioid dependent patients is the increased risk for poly-substance abuse, specifically cocaine (Cumberbatch, Copersino, Stitzer, & Jones, 2004; Leri, Bruneau, & Stewart, 2002)
- Poly-drug consumption by opioid dependent individuals has also been shown to include alcohol, marijuana, benzodiazepines, tobacco, and caffeine (Darke, Gossop, Marsden & Stewart 2002; Staines *et al* 2002; Hser *et al* 2001; Zinkernagel *et al* 2001; Ross & Darke 2000; Gelkopf *et al* 1999; Rooney *et al* 1999; Budney, Bickel & Amass 1998; Pomerleau 1998; Ross & Hall 1995; Fairbank, Dunteman & Condelli 1993)
- The most commonly used medications in opioid replacement therapy are methadone and buprenorphine

  -methadone is a long-acting, full opioid agonist, that has abuse and diversion potential (Drake et al., 2002)

  -buprenorphine/naloxone is a newer form of replacement therapy designed to minimize abuse and diversion while retaining all positive aspects of methadone treatment
- The purpose of this study was to investigate the effect buprenorphine-medication assisted therapy (B-MAT) has on drug abuse rates in a sample of opioid dependent patients
- It was hypothesized that subjects compliant with B-MAT would have significantly reduced drug abuse rates compared to those who were not compliant with B-MAT after 6 months of treatment

Methods

Sample

- Buprenorphine-waivered physicians (N=470) in 40 states were contracted and trained for participation in the study
- New B-MAT patients (N=2194) were recruited between 10/6/08- 2/10/09
- The study sample (N =1,426) were those B-MAT patients who completed a valid baseline survey

-58% Male -88% White -56% Never married
-60% Employed Full-Time -33% Commercially Insured

- 48% of the sample indicated abusing pharmaceutical opioids during the 28 days prior to baseline, with 18% abusing heroin, and 13% abusing methadone

Measures

Addiction Severity Index

- All subjects completed the Addiction Severity Index (ASI, McLellan et al., 2006) at the time of enrollment, and at 1, 2, 3, and 6 months post-enrollment
- The ASI is a semi-structured interview designed to detect and measure potential treatment problems in seven areas commonly affected by drug and alcohol abuse:

  -Drug -Employment -Alcohol
  -Legal -Family -Psychiatric
  -Medical

Buprenorphine Compliance

- Compliance with buprenorphine was captured by asking the number of days during the previous 28 that the participant took the medication as prescribed
- A review of general medication compliance literature indicated that cases who reported taking medication as prescribed on at least 80% of days were most likely compliant (Cramer et al., 2003)
- Therefore, compliance was defined, a priori, as taking buprenorphine medication on at least 22 of the past 28 days (80%)

Procedures

- Surveys were collected telephonically at baseline, and at 1, 2, 3, and 6 month post-baseline
- Patients received $25 for enrolling, $25 for each of the first 3 surveys, $50 for the last 2 surveys, and a $25 bonus for completing all 5 surveys
- Telephone calls, emails and postcard reminders were used to maximize patient retention in the study

Data Analysis

- 2 x 2 chi square tests (compliance at month 6 x drug use) were conducted at baseline and at month 6 on the following drugs: pharmaceutical opioids, heroin, methadone, alcohol, cannabis, sedatives and cocaine

Results

Baseline Results

- Analyses of baseline opioid use by subjects who were either compliant or non-compliant with B-MAT at month 6 revealed no statistically significant differences between the groups (*p*'s > .25; Figure 1)
- Similarly, groups did not differ in cannabis, sedatives, and cocaine use at baseline either (*p*'s > .15; Figure 2)
- Non-compliant subjects were significantly more likely to consume alcohol at baseline ($p < .05$)

Figure 1. Baseline Opioid Use

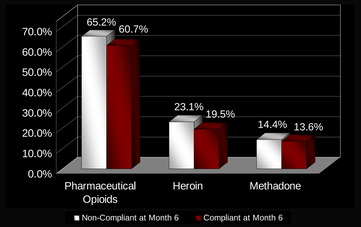
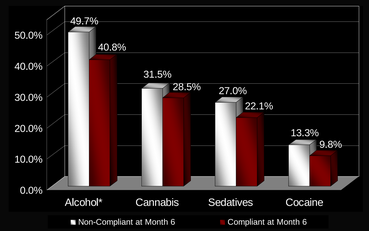


Figure 2. Baseline Other Drug Use



Month Six Results

- At month 6, B-MAT compliant subjects were significantly less likely to use pharmaceutical opioids, heroin, and methadone (*p*'s < .001; Figure 3)
- Compliant subjects used significantly less alcohol, cannabis, cocaine (*p*'s < .01) and sedatives ($p < .05$; Figure 4)

Figure 3. Opioid Use at Month Six

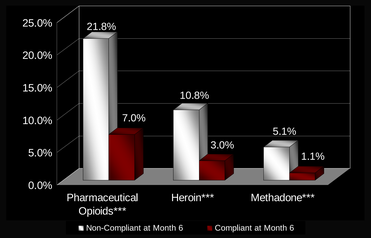


Figure 4. Other Drug Use at Month Six

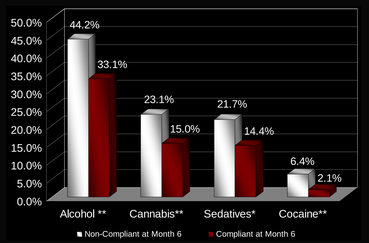
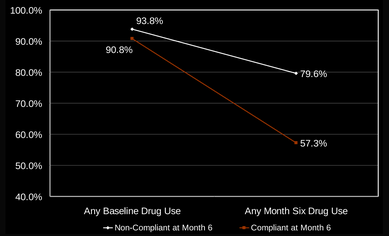


Figure 5. Any Drug Use



- Although both groups showed a decrease in drug use over 6 months, subjects compliant with buprenorphine showed a greater reduction in overall drug use ($p <.001$)

Conclusions

- After 6 months of treatment, opioid dependent patients who were compliant with B-MAT were significantly less likely than non-compliant patients to use a variety of substances:

  -pharmaceutical opioids -heroin
  -methadone -alcohol -cannabis
  -sedatives -cocaine

- These results are particularly important given the high rate of poly-substance abuse among opioid dependent patients (Cumberbatch, Copersino, Stitzer, & Jones, 2004; Zinkernagel et al., 2001)
- Results are also significant given the substantial costs that accompany opioid dependence, including increased health services utilization, neglect of personal responsibilities, and greater criminality (Doran, 2008), which can result from additional or prolonged drug use
- One limitation is the lack of random assignment to compliance group; therefore, effect of compliance on drug use may be endogenous
- Future studies should compare the effectiveness of other treatment modalities (e.g. methadone, psychiatric medication) on drug use in opioid dependent patients

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