Predictors of Buprenorphine-Medication Assisted Treatment Compliance Among Opioid-Dependent Patients: Results at Month Six

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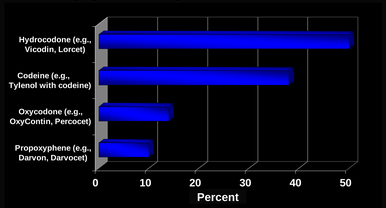
Background

- Opioid dependence results when people abuse legal or illegal opioids in increasing quantity and frequency, first developing tolerance, then dependence
- During recent years, there has been a steady increase in both the number of people who abuse and become dependent upon opioids (SAMHSA, 2007)

Specific Prescription Opioids Used Non-Medically (Past Year)



McCabe, Cranford, Boyd & Teter, 2007 *Addict Behav*

- Opioid dependence is typically treated using abstinence oriented treatment or replacement therapy, but ancillaries to these treatments have been utilized with success over the last two decades (McLellan et al., 1998; McLellan et al., 1993)
- Telephonic interventions are particularly attractive treatment ancillaries because of the relative ease of their delivery, and have been used successfully in the treatment of alcoholism (Horng & Chueh, 2004), as part of continuing care for substance abuse patients (Hubbard et al., 2007), and as part of a medication compliance intervention (Cook et al., 2009)
- The purpose of this study was to investigate the effect of a telephonic intervention on compliance with buprenorphine medication assisted treatment (B-MAT) in a sample of newly diagnosed opioid dependent patients
- It was hypothesized that subjects assigned to receive the telephonic intervention would be more compliant with B-MAT compared to non-intervention controls
- Predictors of compliance would be explored

Methods

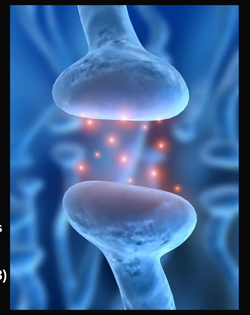
Sample

- Buprenorphine-waivered physicians (N=470) in 40 states served as Study Participant Recruitment Sites
- New B-MAT patients (N=2,194) were recruited between 10/6/08- 2/10/09
- The final study sample included B-MAT patients who completed a valid baseline survey (N =1,426)
- 30% (N=496) randomly assigned to receive standard B-MAT care
- 70% (N=987) randomly assigned to receive the intervention in addition to standard B-MAT care
- Approximately half (48%) of the sample indicated abusing pharmaceutical opioids during the 28 days prior to baseline, with 18% abusing heroin, and 13% abusing methadone

Measures

B-MAT Compliance

- Compliance with B-MAT was captured by asking the number of days during the previous 28 that the participant took the medication as prescribed
- A review of the general medication compliance literature indicated that cases who have 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%)

Addiction Severity Index

- Subjects completed the Addiction Severity Index (ASI, McLellan et al., 2006) at baseline (time of study enrollment), and at 1, 2, 3, & 6 months post-baseline
- The ASI is a semi-structured interview designed to detect and measure potential treatment problems in 7 areas commonly affected by drug and alcohol abuse:

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

Procedures

- Surveys were collected telephonically at baseline, and at each of the 4 follow-up measurement points
- 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

Intervention

- The study intervention was a confidential, outbound, telephonic support program known as HereToHelp™ (HTH)
- The HTH intervention is designed to provide new B-MAT patients with encouragement and help them resolve problems inherent to early B-MAT treatment
- Each participant assigned to the experimental condition was contacted by an HTH intake specialist who then assigned a "Care Coach" - Care Coaches contacted subjects 2-3 times per month over 3 months

Data Analysis

- HTH subjects who did not accept any care coach calls were excluded from the compliance analyses
- 2 x 2 (group by compliance) chi square tests were conducted for all follow-up measurement points
- Stepwise logistic regression was used to predict B-MAT compliance at month 6 from baseline indicators

Results

- The HereToHelp™ group was significantly more likely to be compliant with B-MAT at all 4 measurement periods (months 1, 2, 3 and 6) compared to the group receiving standard B-MAT care alone (p's < .001, Figure 1)
- For HereToHelp™ group members, a positive, linear relationship was observed between number of care coach calls and B-MAT compliance rate (r (420) = .201, p < .001; Figure 2)

Figure 1. HereToHelp's Effect on B-MAT

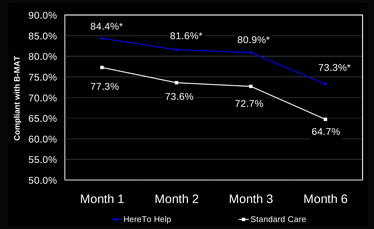
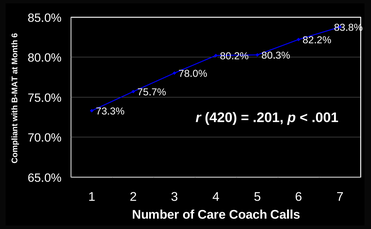


Figure 2. Care Coach Calls and B-MAT



- A total of seven baseline indicators from the Addiction Severity Index were significant predictors of compliance at month 6 (Table 1)
- Along with heroin and barbiturate use, the number of days receiving treatment for psychological problems and the number of days experiencing medical problems were significant predictors of B-MAT compliance
- These relationships were all inverse, indicating that greater severity of these problems led to a lesser probability of being compliant at month 6
- Demographic indicators were also significant predictors of compliance at month 6, and included age, the number of days paid for work, and an overall effect for socioeconomic status
- Older subjects who were paid for more days of work were more likely to be compliant with B-MAT at month 6

Table 1. Baseline Predictors of Compliance

Variable	B	S. E.	Wald	df	**Sig.**	Exp(B)
Days Treated for Psychological Problems	-0.016	0.007	4.91	1	**0.027**	0.984
Days Experiencing Medical problems	-0.019	0.009	4.16	1	**0.041**	0.981
Days of Heroin Use	-0.026	0.009	8.43	1	**0.004**	0.974
Days of Barbiturate Use	-0.037	0.015	6.45	1	**0.011**	0.963
Days Paid for Work	0.020	0.008	6.31	1	**0.012**	1.020
AGE	0.020	0.009	5.15	1	**0.023**	1.020
SES - Overall Effect			13.35	3	**0.004**	
SES (category 1)	-0.68	0.362	3.54	1	0.060	0.506
SES (category 2)	-0.31	0.297	1.11	1	0.293	0.732
SES (category 3)	0.33	0.317	1.06	1	0.303	1.386
Constant	0.828	0.380	4.75	1	0.029	2.290

Conclusions

- Supporting the primary hypothesis, when those who had not engaged in the intervention were excluded from the analysis, the HereToHelp™ group was significantly more likely to be adherent with B-MAT compared to the standard care group
- This effect was present at all 4 measurement points: 1, 2, 3, and 6 months post-baseline
- This randomized controlled trial established that minimal involvement in a telephonic patient support program, combined with usual care, can facilitate early compliance with B-MAT in opioid dependent patients
- Current results replicate, and extend to B-MAT, findings from other studies of the effect of telephonic intervention programs on compliance with medication (Cook, Emiliozzi & El Hajj, 2008; Cook, Emiliozzi & McCabe, 2007)
- Baseline drug use, medical and psychiatric issues, and a variety of demographic indicators were all predictive of B-MAT compliance at month 6 - future research should focus on developing methods that allow or facilitate application of compliance programs, such as HereToHelp™, among these more vulnerable populations

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