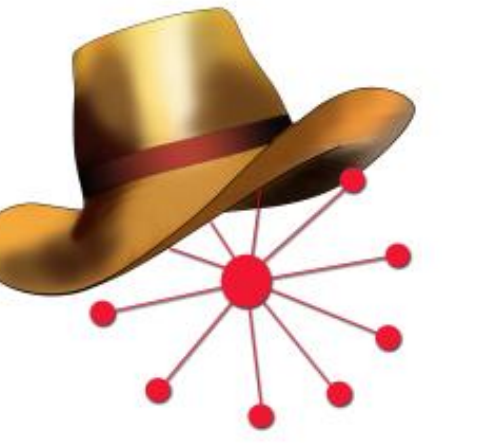


Sociodemographic and Clinical Predictors of Treatment Retention and Substance Use Outcomes



INTRODUCTION

To identify for whom brief, motivation-enhancing interventions for substance use are effective, investigators from the Texas Node of the National Institute on Drug Abuse (NIDA) National Drug Abuse Treatment Clinical Trials Network (CTN) conducted exploratory secondary analyses on the combined datasets from four randomized clinical trials of Motivational Interviewing (MI; Miller and Rollnick, 2002) or Motivational Enhancement Therapy (MET; Miller, Zweben, DiClemente, & Rytchtarik, 1992) versus Counseling as Usual (CAU) conducted within CTN. A number of baseline constructs (e.g., demographics, measures of disease severity) were examined to explore which may be potential predictors of intervention completion and abstinence.

METHODS

Design. The four original studies were designed to assess the impact incorporating motivational interviewing sessions into standard outpatient treatment had on treatment retention and substance use outcomes. The study design and eligibility criteria for each were similar enough to allow them to be combined but were not identical. Each study's intervention, either three or one MET/MI sessions, was conducted in the first 28 days of outpatient treatment. Participants were 18 or older, sought and deemed appropriate for outpatient treatment, used any illicit substance in the previous 28 days, and consented to participate in the study. Three of the trials had additional eligibility requirements (pregnancy (CTN-0013), Spanish as principal language (CTN-0021), and stable living arrangements within the area during the study (CTN-0013 & CTN-0021)).

Participants (N=1520) were recruited from 18 outpatient treatment programs across the U.S. The majority (75%) were never married, divorced, separated, or widowed; 37% were Caucasian; and 37% were female. On average, participants had 11.44 years (SD = 2.7) of education. The majority (74%) had been employed in the past 3 years, but about half (45%) were employed in the 30 days prior to baseline. Almost half (40%) had a positive UDS at baseline.

Participants were randomized to individual sessions of Counseling as Usual (CAU) or MET (3 sessions) / MI (1 session, CTN-0005). Other outpatient group treatment was provided as usual. All studies assessed post-intervention outcomes on 4 weeks post-randomization. In sum:

- CTN-0004: 3 MET sessions, N = 461 (Ball et al., 2007)
- CTN-0005: 1 MI session, N = 423 (Carroll et al., 2006)
- CTN-0013: 3 MET sessions, pregnant women, N = 200 (Winhusen et al., 2008)
- CTN-0021: 3 MET sessions, Spanish-speakers, N = 436 (Carroll et al., 2009)

Analyses. The MET/MI (TRT; n = 741) and Counseling as Usual (CAU; n = 779) conditions were collapsed across studies and both groups were analyzed separately using direct logistic regression because there were no specific hypotheses about the order or importance of the predictors. We sought to explore and identify baseline predictors of the odds of three outcomes: (1) completing the first study-delivered intervention session, (2) completing all three intervention sessions in the MET studies, and (3) drug abstinence 4 weeks post-randomization (at the end of study treatment). An alpha level of .05 was used for all tests and only significant results are reported.

Drs. Walker and Carmody have no conflict of interest to declare. Dr. Trivedi's conflicts of interest are available upon request.

RESULTS

ODDS OF COMPLETING THE FIRST STUDY INTERVENTION SESSION

The majority (85%) of TRT participants completed the first MET or only MI session. Hispanic participants had lower odds of first session completion compared to Caucasians (OR = 0.27, Wald $\chi^2 = 9.3$, $p < .005$).

ODDS OF COMPLETING THE THREE INTERVENTION SESSIONS

One-session MI participants were excluded in order to examine which factors predicted completion of all three MET sessions. Approximately half (57%) of TRT participants completed the three MET sessions to which they were randomly assigned.

The following variables were associated with lower odds of intervention completion:

Both groups:

- Baseline positive UDS. TRT (OR = 0.60, Wald $\chi^2 = 4.1$, $p < .05$) and CAU (OR = 0.61, Wald $\chi^2 = 4.8$, $p < .05$)
- Higher Addiction Severity Index (ASI) Employment Problems scores. TRT (OR = 0.90, Wald $\chi^2 = 4.8$, $p < .05$) and CAU (OR = 0.89, Wald $\chi^2 = 6.7$, $p < .01$)

TRT only:

- Higher ASI Drug Use scores (OR = 0.79, Wald $\chi^2 = 4.4$, $p < .05$).

The following variables were associated with higher odds of intervention completion:

TRT only:

- Higher ASI Alcohol Use scores (OR = 1.12, Wald $\chi^2 = 4.2$, $p < .05$).
- "Other" race (endorsement of multiple racial groups or low frequency racial groups) as compared to Caucasians (OR = 4.37, Wald $\chi^2 = 9.3$, $p < .005$).

CAU only:

- Increasing age (OR = 1.31, Wald $\chi^2 = 4.1$, $p < .05$).

ODDS OF DRUG ABSTINENCE 4 WEEKS POST-RANDOMIZATION

Both TRT and CAU groups were analyzed for potential predictors of abstinence (point-prevalence negative UDS) evaluated post-treatment. Missing UDS samples were treated as missing and, thus, those participants were excluded from these analyses. There were no significant predictors of higher odds of being abstinent post-treatment.

CAU group: The following variables were associated with lower odds of drug abstinence:

- Baseline positive UDS (OR = 0.18, Wald $\chi^2 = 41.7$, $p < .0001$)
- Higher ASI Drug Use scores (OR = 0.74, Wald $\chi^2 = 5.5$, $p < .05$)
- Higher ASI Medical Problems scores (OR = 0.91, Wald $\chi^2 = 5.3$, $p < .05$).

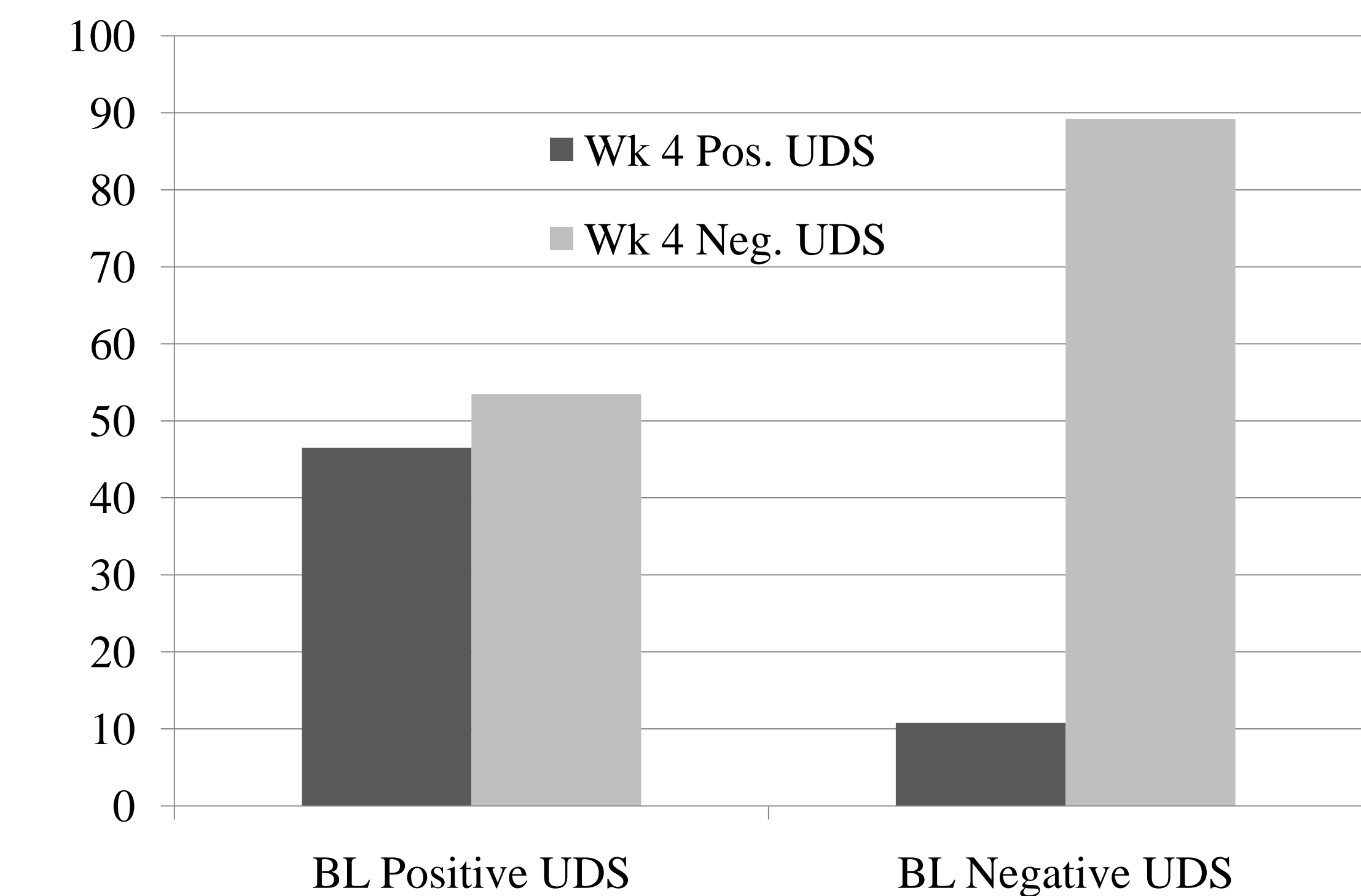
TRT group: Similar results were found in TRT; variables associated with lower odds of abstinence are as follows:

- Baseline positive UDS (OR = 0.18, Wald $\chi^2 = 39.4$, $p < .0001$)
- Higher ASI Drug Use scores (OR = 0.65, Wald $\chi^2 = 10.5$, $p < .005$)
- Higher ASI Medical Problems scores (OR = 0.92, Wald $\chi^2 = 4.6$, $p < .05$).

Note: The following baseline variables were included in all analyses, but no significant associations were found: gender, education, marital status, employment status (past 3 years; past 30 days), admission prompted by legal system, ASI Legal Problems, and ASI Psychiatric Problems.

RESULTS

Percent of Negative and Positive UDS Results 4 Weeks Post-Randomization, by Baseline UDS Negative / Positive Status, for All Participants (N = 997 due to missing 4 wk UDS).



DISCUSSION

A variety of baseline variables were analyzed using logistic regression to explore which may significantly predict treatment session attendance and abstinence at 4 weeks post-randomization/end-of-treatment. There were several significant findings regarding variables associated with lower odds of treatment completion and abstinence but fewer findings regarding predictors of greater odds of treatment completion and abstinence.

Only increasing age was associated with greater odds of completing three sessions of CAU. This may be a proxy for disease severity or could indicate standard outpatient treatment is better suited for older participants who can better handle the responsibilities outpatient treatment requires (e.g., transportation) or are more motivated for change at treatment entry.

Greater alcohol problem severity, indicated by ASI Alcohol Use scores, and "Other" race (compared to Caucasian) was associated with greater odds of completing three MET sessions.

Hispanic ethnicity (compared to Caucasian) is associated with lower odds of completing the first session of a brief intervention. This interesting finding will be further investigated.

Regardless of treatment condition, greater severity of drug use and medical problems is associated with lower odds of abstinence. In addition, all participants with a positive UDS at baseline not only have lower odds of being abstinent post-treatment, but also lower odds of completing treatment. Furthermore, as employment problems increase, all participants' odds of completing either treatment decreases.

All together, these results are consistent with reviews indicating MET may be more effective for those with primary problems with alcohol use and for minority clients (Hetteema, Steele, & Miller, 2005). Results indicate clients most in need of drug use treatment are less likely to complete or benefit from either outpatient treatment as usual or outpatient treatment with motivation-enhancement sessions. These results may indicate a higher level of care is more appropriate for clients with more severe drug use problems. Additional research is needed to determine if more MET sessions earlier in treatment can positively impact treatment attendance and abstinence outcomes.

This work was funded and supported by NIDA's Clinical Trials Network (Grant #U10-DA020024).