

## INTRODUCTION

In spite of the generally good results produced by MI, the precise mechanisms of action associated with MI remain poorly understood and rarely conform to its theoretical model describing behavior change. This study investigated changes in motivational profiles of pregnant substance abusing women, half receiving motivational enhancement therapy for pregnant substance users (MET-PS) and half receiving treatment as usual (TAU). Reported elsewhere, no main effect of treatment on later substance use was found between the MET-PS and TAU conditions (Winhusen et al., in press). One explanation for this finding is that the MET-PS intervention failed to mobilize the intended change processes thought to produce positive outcome.

## METHODS

**Participants:** 200 outpatient pregnant substance abusers from four different provider sites were randomized to TAU (n = 98) or MET (n = 102) for pregnant substance users (MET-PS). A total of 156 pregnant women were administered the 32-item stage of change tool, the URICA, and had complete data for the intake and end of treatment periods.

**Measures: Readiness to Change.** The University of Rhode Island Change Assessment (URICA) (DiClemente & Hughes, 1990) was used to assess the participants' motivation to change their substance use behavior. The URICA consists of 32 items and yields four subscales: precontemplation, contemplation, action and maintenance. It is a self-administered paper and pencil task. The URICA was completed at baseline. A Readiness score utilized in previous research (Pantalon & Swanson, 2003) was used for the present study.

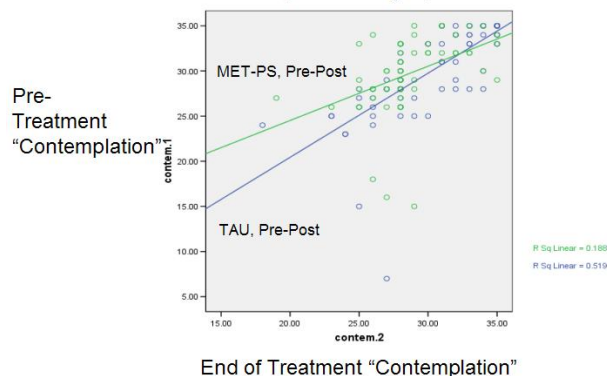
## RESULTS

The study participants have been described by Winhusen and colleagues (in press). In the current study, participants (N = 156) had, on average, 11.51 (SD = 1.83) years of education, and 57.1% reported that they were of "White" ethnicity. Describing the 3-year period before recruitment, 30.1% (n = 47) of the women reported that they worked full

time (35+ hours per week). A majority of the women had never been married, 72.4% (n = 113). All participants were pregnant at intake and 67 (46.9%) of the participants were still pregnant at the time of the 3-month interview, 62 had given birth and 5 had unfortunately had a miscarriage. Hierarchical multiple regressions were done to determine if there were differential pre-post relationships between the four URICA scales by treatment group. The direction and magnitude of pre-post changes in precontemplation did not differ between TAU and MET-PS ( $p < .09$ ;  $\beta$  combined = .48), and controlling for intake precontemplation scores the two groups did not differ in mean posttest precontemplation scores. In contrast, the slope for pre-post contemplation scores was significantly more positive for the TAU group ( $\beta = .71$ ) relative to the MET-PS group, ( $\beta = .42$ ),  $p < .02$ , and MET-PS participants reported, on average, lower contemplation scores at the end of treatment,  $p < .003$  (see Figure 1). Finally, the slopes between pre-post scores for the action ( $\beta = .49$ ) and maintenance ( $\beta = .63$ ) scales did not differ between the TAU and MET-PS clients. As it can be easier to interpret mean values, post hoc ANOVA analyses were conducted and showed that the TAU clients reported significantly higher action ( $M = 30$ ,  $p = .032$ ) and maintenance scores ( $M = 28.7$ ,  $p = .006$ ) than did the MET-PS clients (action:  $M = 28.67$ ; maintenance:  $M = 24.5$ ).

Figure 1

Comparison of Pre-Post Associations in Contemplation about Drug Problem by Treatment group



## DISCUSSION

As hypothesized, the MET-PS group of pregnant participants reported lower contemplation scores relative to the TAU group at the end of treatment. This indicates that ambivalence was reduced or resolved to a greater extent in those who received three MET-PS sessions before TAU compared to those who only received TAU services. We are unable to determine whether participants resolved their ambivalence by deciding that their substance use was problematic versus unproblematic, as both outcomes would theoretically indicate a resolving of ambivalence. The overall similarity in substance use outcomes between MET-PS and TAU groups (Winhusen, et al., in press) does not help us answer this question.

Unexpectedly, the TAU group reported significantly higher mean action and maintenance scores relative to the MET-PS group at the end of treatment. These URICA findings do not appear to have translated into substance use outcome differences between the TAU and MET-PS groups. Reasons for these differences are unclear but warrant future investigation. An additional area for future examination is to follow-up pregnant women's substance use post pregnancy, as some of these women were still early in pregnancy at the follow-up points.

One limitation of these analyses may be that the subject pool of pregnant women is too homogenous in their pre-intervention levels of motivation to reduce substance use due to concern about their pregnancy and to possible social contingencies and pressures not to use drugs while pregnant.

In sum, findings offer partial support for the ability of MET-PS to aid in the resolution of ambivalence, here characterized as contemplation. How the resolution of ambivalence may be related to substance use outcomes requires future study. However, in this sample of pregnant substance users, support was not rendered for MET-PS's ability to increase client action and maintenance of changes, which have been most predictive of substance use outcomes in previous studies.

## ACKNOWLEDGEMENT

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