

Gender, Mental Health, and Treatment Motivation in a Drug Court Setting[†]

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Abstract—The current study examined differences in motivation for drug treatment in a sample of 500 (327 males and 173 females) drug court participants. It was hypothesized that females would report higher levels of treatment motivation, as indicated by measures of problem recognition and desire for help, and that this difference would be moderated by mental health. After controlling for selected factors related to treatment motivation, females were found to have higher levels of problem recognition and desire for help. A significant gender x mental health interaction was also found, suggesting that females with more mental health problems have the highest levels of desire for help.

Keywords—drug court, gender, mental health, treatment motivation

Motivation for treatment is an important factor in determining the outcome of treatment for drug users. Studies have shown that motivation for drug use treatment predicts retention (Simpson & Joe 1993), length of treatment (Knight et al. 2000), and cognitive engagement in treatment (Broome, Simpson, & Joe 1999). This finding has been robust across

[†]This study was supported by Grant R01 DA11309 from the National Institute on Drug Abuse; Carl G. Leukefeld, Principal Investigator; and by the staff and resources of the Center on Drug and Alcohol Research at the University of Kentucky. Opinions expressed are those of the authors and do not represent the position of the National Institute on Drug Abuse.

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treatment modalities (Joe, Simpson, & Broome 1998), and has been demonstrated for both community-based and corrections-based populations (Rosen et al. 2004; Knight et al. 2000). Treatment motivation is affected by a variety of factors, including age, problem severity, peer deviancy, social support, and education status (Hiller et al. In press; McCaul, Svikis & Moore 2001; Hiller, Knight, & Simpson 1999).

Several factors predictors have been established of motivation for treatment across a wide variety of models, including the Stages of Change model (Prochaska, DiClemente, & Norcross 1992), the CMRS model (De Leon & Jainchill 1986), and the TCU Treatment Motivation model. Age has consistently been shown to be predictive of motivation for treatment, with older drug users reporting greater levels of internal motivation (i.e. Knight, Logan & Simpson 2001). Family and peer environments have been linked to treatment motivation as well. Family responsibilities and

obligations are often cited by drug users as reasons for seeking drug use treatment (Joe et al. 1990), while Pellisier & McCarthy (1992) demonstrated that both men and women in correctional settings who planned to live with minor children were more likely to enter and complete treatment. Social environment has also been linked to treatment motivation, as Knight and colleagues (2001) found that drug users in a community-based sample who reported higher levels of peer deviancy reported lower levels of treatment motivation while Hernandez-Avila, Burlinson, and Kranzler (1998) found that greater family and social support were associated with increased likelihood of completing community-based drug use treatment.

Treatment motivation is a complex and dynamic process, as individuals often face added external (i.e. legal) pressure to enter treatment for substance use (Joe, Simpson & Broome 1998). One possible determinant of internal motivation for treatment is mental health distress (Hiller et al. In press). Ryan, Plant, and O'Malley (1995) found that mental health was predictive of internal treatment motivation among an outpatient treatment population with individuals who reported more mental health difficulties indicating greater internal motivation for substance use treatment. Hiller and colleagues (In press) found a similar relation between mental health difficulties and internal motivation for treatment in a correctional setting with offenders who reported higher levels of depression and anxiety indicating both a greater recognition of their substance use as a problem and an increased desire for help with substance use problems. Hiller and colleagues also found effects on treatment motivation for a variety of factors that contribute to increased distress, including physical health, family and social disruptions, and employment difficulties. Offenders with greater problem severity reported higher levels of treatment motivation across all potential problem domains, indicating that offenders who were experiencing more distress were more likely to report motivation for substance use treatment.

Research has indicated differences in male and female drug users in a wide range of domains. Among the most robust findings are differences in mental health status (Lindquist & Lindquist 1999; Peters et al. 1997; Pellisier & McCarthy 1992). Studies have consistently demonstrated differences between male and female drug users in both community-based and criminal justice-based settings with female drug users demonstrating more severe psychosocial problems (Wechsberg, Craddock & Hubbard 1998). Female drug users consistently report both significantly greater levels of mental health problems than male drug users including higher levels of depression and anxiety, and significantly lower levels of self-esteem than male drug users (Kingree 1995; Schober & Annis 1996). This finding has been demonstrated in drug court settings as well as community and prison settings. For example, Hagedorn and Willenbring (2003) reported that female drug court participants indicate significantly more symptoms of depression and anxiety and

significantly poorer mental health than male participants. These findings hold for treatment-seeking drug users as well. Specifically, women drug users entering treatment are more likely to report anxiety, depression, and stress as the primary motivator for treatment-seeking behavior while male drug users entering treatment are more likely to report alcohol use (Schober & Annis 1996). Female drug users are also significantly more likely to report histories of physical and sexual abuse than male drug users with 35% of female drug-using offenders reporting a history of either physical or sexual abuse as compared to 8% of male drug-using offenders (Peters et al. 1997).

Numerous studies have reported that male and female drug users differ on other internal and environmental factors that contribute to distress. Peters and colleagues (1997) present data suggesting that female drug-using offenders typically experience more impairment in areas related to mental health, employment, legal status, and drug use. Female drug users in a criminal justice-based setting typically have fewer resources than male drug users, as they are more likely to experience employment problems, have lower incomes, or be unemployed (Peters et al. 1997). Studies suggest that female offenders are also more likely to have health problems than are male offenders (Conklin, Lincoln, & Tuthill 2000; Lindquist & Lindquist 1999). In addition, family and social environment present different issues for female drug users than for male drug users. Female drug users are more likely to report family conflicts and less likely to report family support than male drug users (Knight, Logan & Simpson 2001), and are significantly more likely to report living with minor children (Pellisier & McCarthy 1992). While the presence of minor children in the home has been negatively associated with treatment retention among community-based women (Knight, Logan & Simpson 2001), treatment programs developed to meet the needs of pregnant women and mothers have demonstrated increased retention rates, suggesting that the lower rate of retention in many programs may be less an issue of motivation than of limited child-care resources (Pellisier & McCarthy 1992).

Few studies have examined differences in motivation for drug treatment between men and women, despite research that demonstrates gender differences on a variety of variables that are associated with motivation for treatment. Initial studies indicate that female drug users may be more likely to be motivated for treatment, as female drug users are more likely to recognize their drug use as a problem (Pellisier & McCarthy 1992) and women arrested for drug use are more likely to request and indicate a need for drug treatment than male arrestees (Peters et al. 1997).

The purpose of the present study is to examine gender differences in treatment motivation in a sample of drug court participants. Female drug users in drug court typically experience more severity across multiple domains of functioning than male drug users, including mental health, physical health, employment, and family environment.

Given the link between problem severity and motivation for drug use treatment, it was hypothesized that female drug-using offenders would have higher levels of treatment motivation than male drug-using offenders. However, given the demonstrated link between mental health problems and treatment motivation, it was hypothesized that mental health problems would moderate gender differences in treatment motivation such that motivation for substance use treatment will be highest among females who report significant mental health problems.

METHOD

Participants

Study participants were 500 clients (327 males and 173 females) who entered one of two Kentucky Drug Court programs between March 1999 and December 2002. Study eligibility was based on entry into the Drug Court program. To enter the program, a participant must have: (1) had a self-admitted drug problem; (2) met criteria for drug abuse from the Addiction Severity Index (ASI); (3) consented to a urine drug test; (4) had a nonviolent criminal history; and (5) signed an agreement of participation for the program (Logan et al. 2000).

The average age was 30.5 years old (range = 18 to 57). Participants were mostly White (61.8%), mostly single and never married (53.4%); they reported an average 11.8 years of education and an average number of 1.6 children. Half of the participants (50%) were from the urban site (Fayette County Drug Court) and 50% were from the rural site (Warren County Drug Court).

Procedure

As part of a large NIDA-funded randomized trial, participant recruitment began as eligible individuals entered the Drug Court program. A more detailed description of the Drug Court program can be found in a study by Logan and colleagues (2000). For study recruitment, program entry was defined as the first appearance before the Drug Court judge. Potential participants were contacted at the end of the court hearing by an interviewer. At the introductory recruitment session, interviewers described the purpose of the study, the parameters of confidentiality, and subject payment opportunities. If the potential participant expressed interest, an interview was scheduled and a reminder card was distributed. The interview lasted about two hours, and all subjects were paid \$25 for completing the interview.

During the recruitment period, 525 clients entered the Fayette and Warren County Drug Court programs and were therefore eligible for the study. Enrollment in the project was voluntary, and confidentiality was strictly maintained. Of those clients, 500 were interviewed (95%), seven clients refused participation, and 18 clients were terminated within 30 days of program entry and prior to the scheduled interview date. Refusal rates were low, possibly due to the nature of the

interview and the monetary compensation. Prior to each interview, participants were given a full description of the research project and procedures by the interviewer. Drug Court clients who agreed to participate in the study were interviewed face-to-face within two weeks of program entry. Participants were interviewed in a private setting either within the Drug Court office or a local field office site. Each question was asked individually by a trained interviewer and responses were recorded by the interviewer.

Measures

Addiction Severity Index (ASI). Demographics, health status, substance use and substance use treatment history measures were collected using the Addiction Severity Index (McLellan et al. 1980). ASI ratings have provided reliable and valid measures of problem severity for both drug and alcohol users and sensitive measures for treatment change (McLellan et al. 1992; Kosten, Rounsaville & Kleber 1985). Health status was measured by one item which asked participants to rate their overall health on a five-point scale (1 = poor and 5 = excellent). Substance use history was measured by the number of years participants reported using multiple substances. Substance use treatment history was calculated by summing the lifetime number of self-reported alcohol and drug treatment episodes.

Brief Symptom Inventory. The Brief Symptom Inventory was developed from the larger SCL-90 (Derogatis & Melisaratos 1983). This psychological inventory contains 53 items and measures nine symptom dimensions including somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. Each item is a mental health problem symptom, and participants were asked to indicate the extent to which each problem has bothered them during the past seven days. Each subscale was scored on a five-point scale (0-4), with higher scores indicating higher levels of the symptom dimension. The subscales had adequate reliability (Cronbach's alphas from .73 to .86) and were combined to produce the Global Severity Index (Cronbach's alpha = .97).

TCU Motivation Assessment. Treatment motivation was assessed using the Problem Recognition and Desire for Help scales of the TCU Motivation Assessment (Simpson & Joe 1993). The Problem Recognition scale (nine items, $\alpha = .89$) asked the frequency with which drug use has caused problems in various areas of life. The Desire for Help scale (five items, $\alpha = .83$) measured how much participants realized that they needed help for their drug problem. Participants responded to each set of items using a five-point scale (0 = never; 4 = always).

RESULTS

Bivariate Analyses

A series of bivariate correlations were used to assess differences in sociodemographic characteristics, problem

TABLE 1
Demographic, Mental Health and Treatment Motivation Characteristics by Gender

	Males (n = 327)	Females (n = 173)
Age	30.0	31.2
Years of education	11.8	11.6
% White	61.2	63.0
% Married	16.8	19.1
Years of multiple drug substance use	5.2	4.7
Substance use treatment episodes	2.2	2.0
Perceived health status ***	3.4	2.9
Brief Symptom Inventory **	0.7	0.9
Desire for Help **	2.8	3.2
Problem Recognition ***	2.5	2.9

** $p < .01$.

*** $p < .001$.

severity, and treatment motivation (the Problem Recognition composite score and the Desire for Help composite score) by gender (see Table 1). Analyses indicated that males and females were equivalent across sociodemographic variables, including age, race, education level, and marital status. Additional analyses revealed significant differences between male and female drug users on mental health distress and treatment motivation with females reporting significantly lower mental and physical health and significantly greater motivation for substance use treatment.

Bivariate analyses also assessed the relation of the sociodemographic characteristics and mental health and distress indicators to treatment motivation (see Table 2). Bivariate analyses revealed relations between substance use history, mental health, and physical health status with both indicators of treatment motivation. Mental health problem severity was positively related to both indicators of treatment motivation, such that individuals who reported greater severity of mental health problems indicated greater motivation for treatment. Physical health status was negatively related to problem recognition, with individuals who indicated poorer physical health reporting greater recognition of substance use as a problem, but was positively related to desire for help, with participants who reported better physical health reporting greater desire for help with substance use cessation.

Multivariate Analyses

Hierarchical regression was used to assess the main effects of gender and mental health on treatment motivation and to determine if mental health status moderated the effect of gender on motivation. Covariates were included in the initial step of the regression analyses if they were significantly correlated ($p < .05$) with motivation. Covariates included age, marital status, history of prior substance use treatment, self-reported physical health status, and multiple drug use history (see Table 2). Race was also included as a covariate to control for ethnic and cultural differences in

treatment-seeking behavior, as some studies have indicated lower levels of treatment motivation and completion for African-American substance users than White substance users in the criminal justice system (Brady, Christopher & Laird 2004; Sechrest 2001). Gender and BSI score were entered into the second step to assess for main effects of gender and mental health on treatment motivation. An interaction term of gender and BSI score was entered in the third step to assess for moderating effects. Identical regression models were used to examine Problem Recognition and Desire for Help.

Problem Recognition. Results revealed that the model was significantly predictive of problem recognition ($R^2 = .24, p < .001$). Significant predictive effects were found for the covariates ($\Delta R^2 = .21, p < .001$) and the gender and BSI score ($\Delta R^2 = .02, p < .01$), and a marginally significant effect was found for the interaction term ($\Delta R^2 = .01, p = .09$). Several sociodemographic characteristics emerged as significant covariates. Specifically, greater problem recognition was related to increased age ($\beta = .22, t = 4.60, p < .001$), being White ($\beta = .10, t = 2.27, p < .05$), poorer self-reported physical health ($\beta = -.20, t = 4.48, p < .001$), and more years of multiple substance use ($\beta = .22, t = 4.73, p < .001$). Main effects were observed for both gender and mental health on problem recognition with increased problem recognition being related to being female ($\beta = .09, t = 2.08, p < .05$) and having increased BSI scores ($\beta = .11, t = 2.34, p < .05$). The gender x BSI interaction term was marginally predictive of increased problem recognition ($\beta = -.10, t = -1.70, p = .09$), indicating that the main effect of gender was only partially moderated by self-reported mental health problems. Post hoc decomposition of these results indicated that females who reported high levels of mental health problems had marginally higher problem recognition than did either females who reported low levels of mental health problems ($\beta = .18, t = 2.88, p < .01$) or males with either high or low levels of mental health problems ($\beta = .03, t = 0.44, p = .66$). No differences were observed between

TABLE 2
Correlations between Participant Characteristics and Treatment Motivation

	Problem Recognition	Desire for Help
Age	.20	.20
Years of education	.01	.03
% White	.03	-.05
% Married	.12**	.09*
Years of multiple drug substance use	.26**	.32**
Substance use treatment episodes	.04	.01
Perceived health status	-.22**	.16**
Brief Symptom Inventory	.25**	.17**

* $p \leq .05$.

** $p \leq .01$.

females and males who reported low levels of mental health problems or between males at high and low levels of mental health problems (see Figure 1).

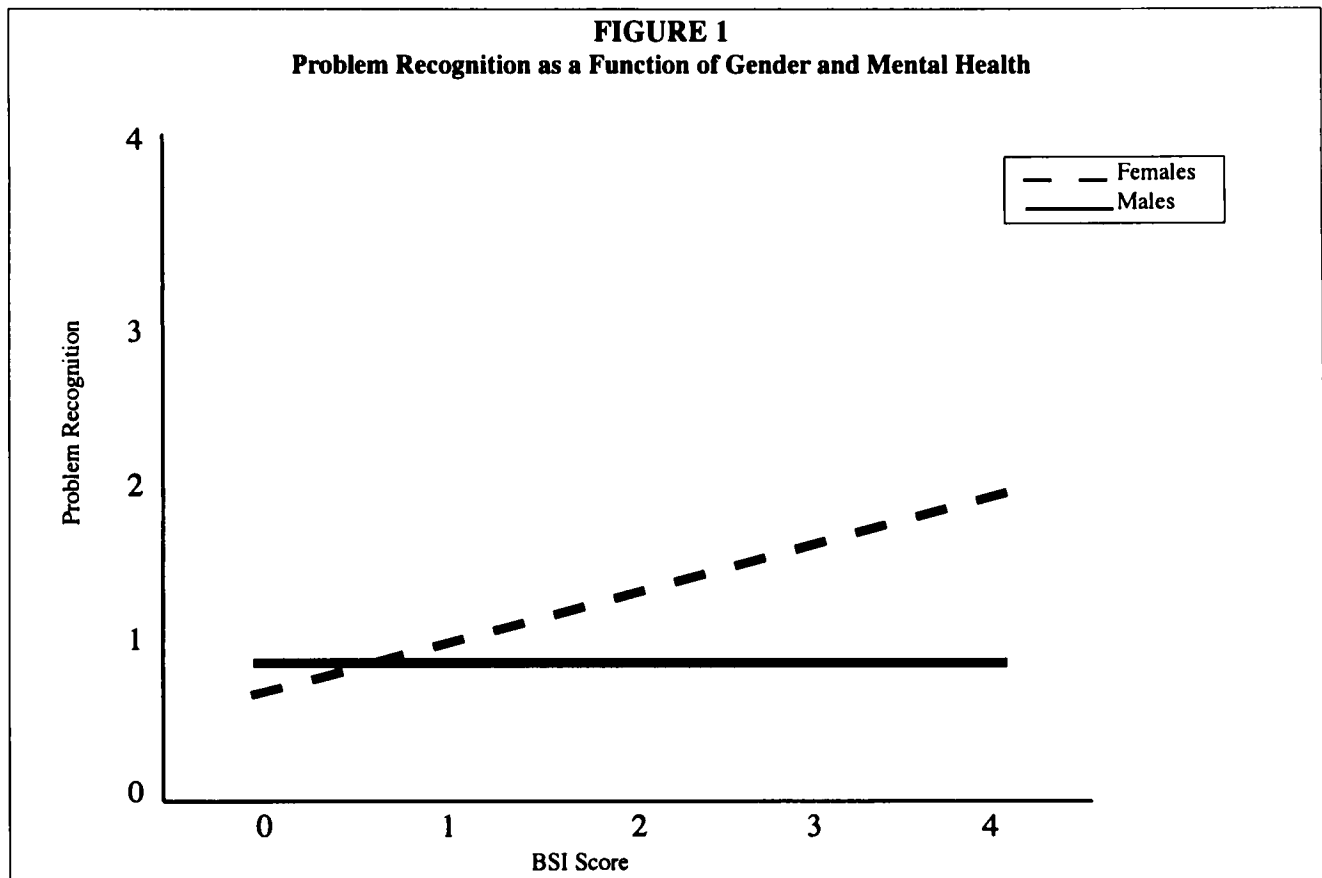
Desire for Help. Results showed that the model significantly predicted desire for help ($R^2 = .21$, $F = 11.48$, $p < .001$). Significant effects were found for the sociodemographic covariates ($\Delta R^2 = .19$, $p < .01$). The gender and BSI score did not contribute significant variance to the model ($\Delta R^2 = .01$, $p = .10$); however, the interaction term was significantly predictive of desire for help ($\Delta R^2 = .01$, $p < .05$). Greater desire for help was related to greater age ($\beta = .24$, $t = 4.89$, $p < .001$), poorer self-reported physical health ($\beta = -.12$, $t = 2.65$, $p < .01$), and greater years of multiple substance use ($\beta = .23$, $t = 4.83$, $p < .001$). There was no main effect of gender ($p = .26$) on desire for help and a marginally significant effect of BSI score ($p = .08$). The interaction of gender \times BSI was significantly predictive of desire for help ($\beta = -.15$, $t = -2.44$, $p < .05$). Post hoc decomposition of these results revealed that females who reported high levels of mental health problems had significantly higher desire for help than either females who reported low levels of mental health problems ($\beta = .19$, $t = 2.92$, $p < .01$) or males who reported either high or low levels of mental health problems ($\beta = -.04$, $t = -0.52$, $p = .61$). No differences were observed between females and males who reported low levels of mental health problems or between males at high and low levels of mental health problems (see Figure 2).

DISCUSSION

Motivation is an important component of treatment adherence and retention for substance users (Joe, Simpson & Broome 1998; De Leon & Jainchill 1986); therefore, it is important to understand factors that affect motivation for substance use treatment. This study examined how mental health problems were associated with the treatment motivation of male and female substance abusers. It was expected that mental health would be associated with motivation for treatment, as previous studies had demonstrated that increased mental health distress was associated with in-

creased treatment motivation (Hiller et al. In press). Given the demonstrated differences between male and female substance users on indicators of problems severity (Peters 1997), it was also expected that the motivation for substance use treatment among drug court participants would be higher for females than males. Additionally, given the demonstrated differences in the mental health status of male and female substance users across settings (Hagedorn & Willenbring 2003; Kingree 1995), it was expected that these gender differences in treatment motivation would be moderated by mental health. Results of this study revealed that, after controlling for age, race, marital status, health, years of multiple substance use, and substance use treatment history, females reported higher levels of problem recognition and desire for help than males. Furthermore, a marginally significant gender by mental health interaction was found for problem recognition and a significant interaction was found for desire for help. In each case, interactions were characterized by higher levels of treatment motivation among females with more mental health problems than among females with fewer mental health problems (as identified by the Brief Symptom Inventory) or males at any level of mental health symptomatology.

Several possible explanations exist for the gender differences in substance use treatment motivation. For example, both individual (e.g., mental health) and environmental (e.g., economic) issues have been shown to be related to drug abuse treatment motivation (Hiller et al. In press). Consistent with Hiller and colleagues (2003), the current study found that both mental health severity and problems in domains associated with mental health distress predicted increased treatment motivation. Substance users who are experiencing more distress and mental health problems may be more likely to recognize the problems associated with their substance use, and may thus be willing to accept help with their substance use. Additionally, studies indicate that female substance users experience greater impairment and dysfunction than males in a broad array of areas, including mental health functioning and problems in areas that may contribute to mental health distress (i.e. employment, family



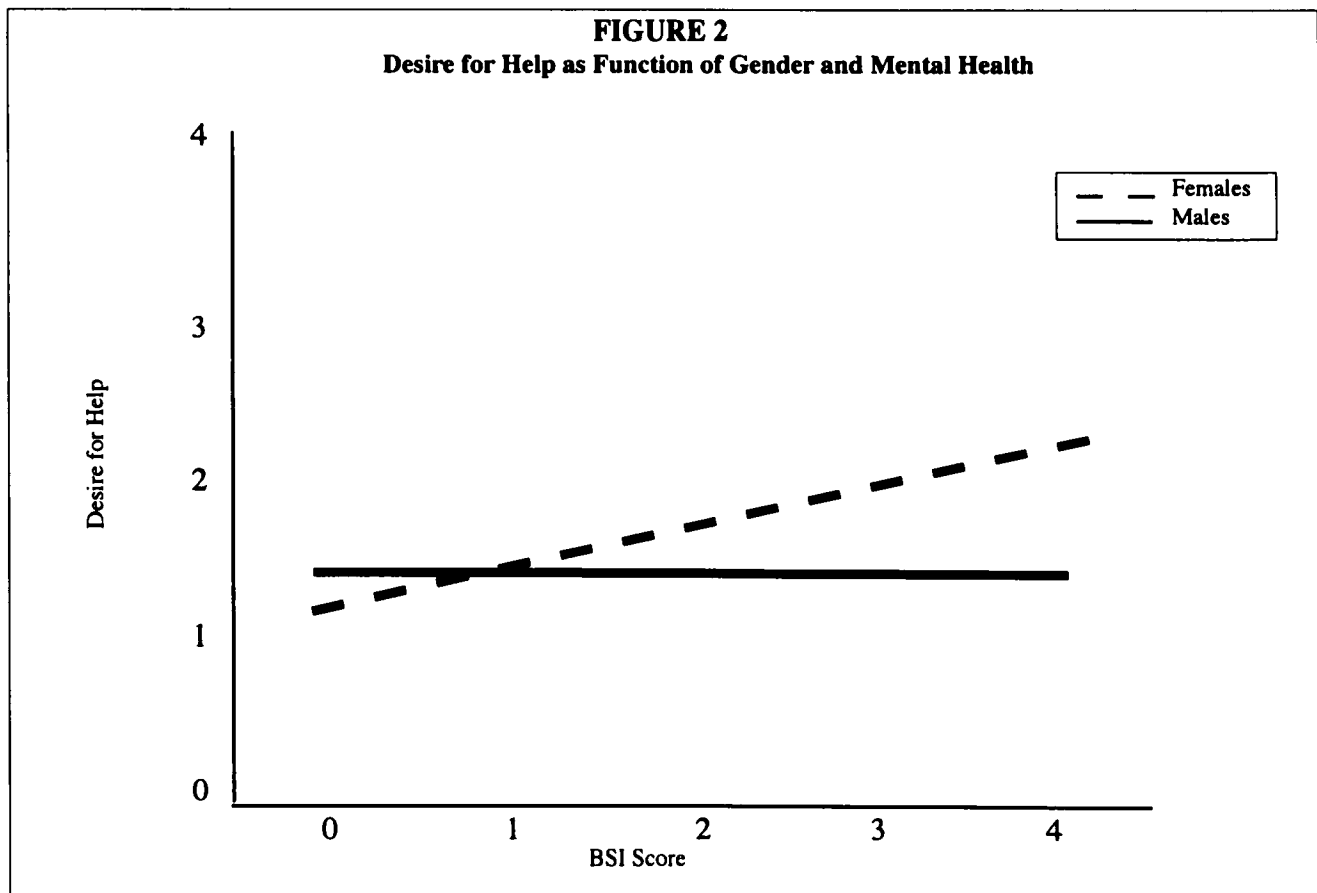
and social environment, physical health; Knight, Logan & Simpson 2001; Kingree 1995). The current study found that mental health problems were higher among drug-abusing women than men, and that higher levels of mental health problems were related to greater treatment motivation in women but not in men.

One possible explanation for the interaction effects could be the differences in overall levels of distress experienced by males and females. Female substance users typically experience greater overall mental health problem severity and distress than males, thus it may be that only female substance users who experience mental health distress perceive themselves as severely distressed enough to need treatment. Indeed, only females who indicated mental health problems approached moderate levels of treatment motivation on either scale. Given the baseline differences in the problem severity and distress levels of male and female substance users, females with higher BSI scores may be experiencing more distress than males with high BSI scores and thus expressing a greater desire for substance use treatment.

Another possible explanation for these differences may relate to social norms. Social norms may be more likely to indicate an acceptability of expressing distress and reaching out for assistance for women than men, making it more likely that female substance users would express their problems and seek help. This would suggest that female substance

users who experience mental health problems would be more likely to communicate their recognition of these problems (Problem Recognition) and their need for support (Desire for Help) than males who were experiencing similar problems. While the present study did not directly examine this hypothesis, it would be supported by the present study since female substance users with high levels of mental health problems expressed greater treatment motivation than male substance users with high levels of mental health problems.

This study has limitations. The study included participants from two drug courts, and participants were neither representative of all drug abusers nor of all drug court participants. Additionally, violent offenders were not included in this study because participants had to meet criteria for drug court eligibility. Another limitation concerns the cross-sectional nature of the study which provides only a single time-point assessment of treatment motivation and mental health functioning. Although the present study examined the effects of mental health on treatment motivation, it does not account for possible effects of treatment motivation on mental health or bidirectional effects. For example, being motivated for treatment might have a reciprocal effect on mental health for which the present study does not account. Finally, this study only examines the interaction of gender and mental health, despite the presence of several significant covariates including age, physical health, and substance use history. It is possible that these effects vary by gender or



mental health status as well, and future studies are needed to examine these complex relations.

This study is a step towards understanding gender differences in treatment motivation. The study's findings increase understanding of the importance of drug treatment motivation in the context of gender and mental health. Males and females have been shown to differ on a variety of variables which are predictive of motivation such as family support, abuse history, and employment problems (Knight et al. 2000; Peters et al. 1997). The present study extends these findings by directly examining gender differences in motivation, including how males and females differ in motivation and varying levels of mental health distress. Results suggest the need for additional assessment of substance users in the

drug court setting, given the relatively high levels of mental health problems among all participants and the relations of mental health distress with treatment motivation. The current study also indicates the need to consider gender differences in the designing and implementing of interventions given the observed gender differences in mental health severity and treatment motivation. Finally, a better understanding of internal factors that influence an individual's motivation for substance use treatment is needed since studies indicate that individuals who are more motivated for treatment are more likely to experience success (i.e. Knight et al. 2000; Rosen et al. 2004; Simpson & Joe 1993). This knowledge could help tailor treatment to address factors that enhance treatment motivation and, in turn, treatment success.

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