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Procedural justice in mental health courts: Judicial practices, participant perceptions, and outcomes related to mental health recovery

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Abstract

Research on mental health courts (MHCs) to date has been disproportionately focused on the study of recidivism and reincarceration over the potential of these problem solving courts to facilitate the recovery process and affect the slope of recovery. This study attempts to shift the focal point of interest from well-established criminal justice outcomes to the experiences and perceptions of MHC participants. The authors hypothesize that the actions of MHC judges that are consistent with procedural justice theory will engender high perceptions of procedural justice among this sample of divertees with SMI. Defendant perceptions of procedural justice in 4 NYC-area MHCs were also compared to those of uninvolved observers. Results suggest that defendant perceptions are distinct from observer perceptions, which tended to be more sensitive to the differences in judges between the four courts. Overall, participants' perceptions of procedural justice were moderate and increased between baseline and 4-month follow-up. Procedural justice was negatively correlated with symptoms at baseline and was positively correlated with participant's attitudes toward their own recovery. Between baseline and 4-month follow-up, participants in our sample tended to increase in perceptions of procedural justice; interestingly, the increase in procedural justice was associated with a decrease in symptoms but not to an increase in attitudes toward the recovery. Implications and future directions are discussed.

Keywords

Mental health court; Procedural justice; Recovery; Judge; Problem-solving court

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1. Introduction

1.1. Mental health courts

Mental health courts (MHCs) represent an area of social science research in which empiricism struggles to keep pace with policy and practice. In the nearly 15 years since the Broward County MHC accepted its first defendant, over 280 MHCs have been developed (Lerner Wren, 2010; Steadman, Redlich, Callahan, Robbins, & Vesselinov, 2011). Despite a flurry of research documenting the positive effects of MHCs on criminal justice outcomes (e.g., Christy, Poythress, Boothroyd, Petrila, & Mehra, 2005; Hiday & Ray, 2010; Moore & Hiday, 2006), there have been few attempts to explore the impact of MHC practices on outcomes related to recovery from severe mental illness (SMI). Recovery is typically conceptualized as a multidimensional construct consisting of objective (symptom reduction, improvement in functioning) and subjective (hopefulness, empowerment) components (Department of Health and Human Services, 2003). Research on the effects of MHC practices on recovery is especially needed given the documented variability in the practices of MHCs (Erickson, Campbell, & Lamberti, 2006; Griffin, Steadman, & Petrila, 2002; Redlich, Steadman, Monahan, Robbins, & Petrila, 2006), and the lack of consensus of what aspects of MHC practice might facilitate recovery.

1.2. Procedural justice

A potentially key area where practices may vary between MHCs and which may impact participant outcomes relates to procedural justice (Lind & Tyler, 1988; Thibaut & Walker, 1975). Procedural justice theory posits that one's satisfaction with legal or clinical interactions is primarily influenced by the quality of the procedural experience rather than the outcome of the interaction. Interactions that are perceived as procedurally just involve respect and dignity, involvement in the decision-making process, trust in the fairness of the process, and absence of coercion. Most studies demonstrate that demographic characteristics are not associated with perceptions of procedural justice (e.g., Tyler, 2005), however, it has been suggested that members of stigmatized groups, such as people with SMI, might be particularly sensitive to procedural fairness (Tyler, 1992; Watson & Angell, 2007). Evidence supports that procedural justice is a relevant component of the experiences of people with SMI in their interactions with mental health professionals in involuntary commitment settings (e.g., Cascardi, Poythress, & Hall, 2000; Greer, O'Regan, & Traverso, 1996; McKenna, Simpson, & Coverdale, 2000, 2006; O'Donoghue et al., 2011), police offficers (e.g., Watson & Angell, 2007; Watson, Angell, Vidalon, & Davis, 2010), and professionals in mandated community treatment contexts (e.g., Galon & Wineman, 2010; Swartz, Wagner, Swanson, & Elbogen, 2004; Winick, 2003). The concept of procedural justice also appears to fit well with the concept of “recovery-oriented services” in the treatment of persons with SMI. Recovery-oriented services are distinguished by policies, procedures, interventions, and attitudes that support recovery (O'Connell, Tondora, Evans, Croog, & Davidson, 2005; Onken, Dumont, Ridgway, Dornan, & Ralph, 2002), and include elements such as a collaborative treatment relationship, client-centered services, and the belief that mental health consumers can assume typical life roles.

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Although few studies have applied the concept of procedural justice to persons with SMI in MHCs, the theory supporting procedural justice extends readily to a MHC setting: high levels of procedural justice may lead to internalization of the value of rules and laws. Increasing internalization leads to compliance with these laws, whereas fear-based practices such as coercion, deterrence, and punishment do not (Tyler, 2009; Tyler & De Cremer, 2009). In one early study of MHCs, Poythress, Petrila, McGaha, and Boothroyd (2002) assessed levels of perceived coercion and perceived procedural justice and found low levels of perceived coercion and high scores on all dimensions of procedural justice (respect, voice, and fairness) among MHC participants in contrast with defendants with SMI processed through a mainstream criminal court. Despite the suggestion that MHC participants have high levels of perceived procedural justice relative to defendants with SMI in a traditional court environment, studies have yet to make clear the extent to which perceptions of respect, inclusion, and absence of coercion for this population correspond with objective ratings of the same interactions.

1.3. The role of the MHC judge

The judge is an important, yet seldom researched figure in MHCs that may play a crucial role in creating an atmosphere that participants perceive as fair and respectful. Fisler (2005) underscored the important role of the judge in engaging the participant in the court process and maximizing the likelihood of MHC success. A recent meta-analysis (Sarteschi, Vaughn, & Kim, 2011) highlighted an emerging theme of previous MHC studies: MHC defendants' relationship with court personnel—and potentially with the judge in particular—seemed to affect whether defendants successfully graduated from MHC diversion programs. Bess (2004) pointed out the cultural differences that are often inherent in a MHC setting, in which "law enforcement personnel…view their role as containment and control, while mental health and human services professionals… emphasize empowerment and personal goal setting" (p. 21). A MHC judge that adheres to principles of therapeutic jurisprudence has the unique potential to reconcile these differences between court and diversion staff. The extent to which a judge, for instance, encourages a nonhierarchical working relationship with other stakeholders, solicits and is responsive to mental health professionals' recommendations, and is vested in the best therapeutic interests of the defendants considerably influences the culture of the MHC over which he or she presides (Manasse, 2009).

Several studies have incorporated structured observations of MHC judges and suggest that MHC judges interact with defendants in a manner that is distinct from the way judges typically interact with defendants in traditional courts. A comprehensive evaluation of the Brooklyn MHC, which included structured court observation, documented direct conversational exchange and eye contact with the defendant occurring in 96% of judge–defendant interactions (O'Keefe, 2006). Furthermore, probing questions (unspecified) were asked of 64% of defendants, 63% of participants were invited to approach the bench (cause unspecified), and, of these, the judge shook or touched the hand of the participant 46% of the time. More recent studies examining procedural justice elements of judicial behaviors in MHCs include the studies of Frailing (2010) and Wales, Hiday, and Ray (2010) (these studies were published after our project began). Frailing hypothesized that court appearances were most influenced by the actions of the judge and that the judge's behavior would

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therefore predict participants' outcomes. Frailing observed three MHC judges over the course of 10 days of courtroom observation. During these observations, the author coded 87 praise comments, 62 encouragement comments, and 19 sanction comments. In addition, the author found reductions in recidivism and substance use during and in the year subsequent to participation in the Washoe County MHC. Frailing hypothesized that the judges' interest in and praise of MHC participants was related to positive participant outcomes; however, this conclusion seems somewhat premature given the lack of data from a comparison group.

In another recent study of judicial behavior, Wales et al. (2010) used qualitative methods to examine the degree of procedural justice engendered by the judge. The authors hypothesized that previously documented reductions in criminal recidivism are facilitated by actions of the MHC judge that are consistent with procedural justice theory. Namely, the judge (1) interacts with MHC participants in a way that accords them dignity, respect, and voice and emphasizes their control and autonomy; (2) the judge holds participants and stakeholders accountable for their respective roles; and (3) the judge provides transparency concerning his or her decisions. The authors assessed procedural justice among defendants as influenced by the judge of the Washington DC Mental Health Diversion Court (DCMHDC) quantitatively and qualitatively. Procedural justice components of voice, respect, and fairness were thematic elements of most (61.9%) qualitative responses and participants tended to have high levels of perceived procedural justice regarding their interactions with the judge.

In summary, while prior studies suggest that MHC judges may play a key role in influencing participant perceptions of procedural justice, studies have yet to directly assess the relationship between objectively rated judicial behavior and participant perceptions. In addition, while studies hypothesize that perceived procedural justice may influence positive participant outcomes in MHCs, studies have yet to examine the relationships between procedural justice and outcomes related to mental health recovery.

1.4. The present study

Because MHC practices vary considerably from court to court (Erickson et al., 2006; Griffin et al., 2002; Redlich et al., 2006), and because the judge has been an under-studied figure in MHC research to date, the present study strove to (1) better understand the relationship between objectively-rated judicial practices and defendant perceptions of procedural justice, as well as to (2) explore the relationship between perceived procedural justice and mental health outcomes related to recovery. We therefore used a combination of courtroom observations of four MHCs in the New York City-area and direct interviews with MHC participants in these courts to examine defendant perceptions of court practices (including perceived procedural justice) and the association between these perceptions and outcomes related to recovery. This study represents the first attempt to assess whether and to what extent perceptions of procedural justice relate to symptoms and self-perceptions of recovery potential. The theoretical basis for the presumed relationship between the behavior of the judge and MHC participants' perceptions of procedural justice was based on Tyler's (1988) application of a procedural justice framework to civil commitment hearings in order to engender positive treatment outcomes via the quality of the interaction with persons of

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authority; Watson and Angell's (2007) assertion that procedural justice has a profound impact early in an authority–citizen interaction; and Wales et al.'s (2010) attribution of observed reductions in recidivism among MHC participants to observed judicial practices that were consistent with procedural justice.

2. Methods

2.1. Participants

Study sites included Westchester County, Brooklyn, Bronx, and Queens MHC programs. Diversion was offered as a voluntary alternative to incarceration (for a more detailed review of the Brooklyn, Queens, and Bronx MHC and diversion programs, see Barber-Rioja, Dewey, Kopelovich, & Kucharski, 2012) for criminal defendants who meet New York state criteria for SMI, including a DSM-IV-TR Axis I diagnosis other than substance use/abuse, organic brain syndromes, developmental disabilities or social conditions; functional impairment due to mental illness; SSI or SSDI due to mental illness, and/or reliance on psychiatric treatment, rehabilitation and supports (Office of Mental Health, n.d.).

Our recruitment strategy consisted of attempting to recruit all individuals newly enrolled into each of the 4 MHCs within a 3-month period. In order to do so, we arranged to approach new enrollees shortly after they had been accepted by the MHC diversion team. All enrollees that we approached participated in the project, so we encountered no direct “refusals.” However, some enrollees may have told the diversion team that they were not interested in speaking with the research team about the project. Unfortunately, we cannot estimate how many such “refusals” occurred.

The final study sample consisted of 51 criminal defendants newly enrolled in 4 MHCs in the New York City-area. Due to the comparative nature of the analyses, all courts are hereafter de-identified. Courts were randomly designated A, B, C, or D. Of the 51 total baseline interviews, 24 (47.1%) were conducted at Court A, 18 (35.3%) were conducted at Court B, 6 (11.8%) were conducted at Court C, and 3 (5.9%) were conducted at Court D. A total of 38 follow-up interviews were conducted at each of the four sites [Court A=19 (50.0%), Court B=13 (34.2%), Court C=4 (10.5%), Court D=2 (5.3%)]. Due to the small sample attained in courts C and D, these participants were omitted from comparative analyses. Attrition rates were not significantly different across sites. The reasons participants did not complete follow-up interviews are unknown, although we believe that participants who did not complete follow-up interviews had lost contact with the diversion team. No participant who was available refused to complete a follow-up interview. When comparing characteristics of participants who did and did not complete follow-up interviews, we found non-significant trends for participants who did not complete follow-up interviews to be more likely to be male and younger than other participants. Participants who dropped out did not differ from other participants in race/ethnicity, or on any of the measures studied (see below).

Participants in the current study had a mean age of 39.46 (SD= 11.66, range 20–62) and were mostly male (64.7%). Racially, the sample was 40.8% African American, 36.7% Latino, 16.3% White, 4.1% Asian, and 2% “other.” Most participants had either attained a High School diploma or GED (42.0%), followed by no diploma or GED (36.0%), some

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college (10.0%), associate's degree (2.0%), bachelor's degree (2.0%), some graduate school (2.0%), and graduate/professional school (6.0%). Participants from Courts A and B differed with regard to age (mean (SD)= 42.92 and mean (SD)=33.67(12.5), respectively; $t(29.65)=2.66$, $p<.05$) and racial composition (x^2 (4, $N=42$)=11.25, $p<.05$), with Court A participants more commonly self-identifying as Latino. No other significant inter-court differences emerged.

2.2. Measures

2.2.1. Courtroom observation—The Courtroom Observation Survey was designed to glean information relevant to an assessment of procedural fairness, respect, warmth, familiarity, inclusion/voice, and absence of coercion for each defendant–judge interaction. The Courtroom Observation Survey includes a Judge Subscale (potential score range=1–21). Specific areas noted in the survey included objective observations such as the number of minutes the judge met with the defendant, whether the judge spoke directly to the defendant, whether the judge made eye contact with the defendant, and whether the judge gave the defendant the opportunity to speak, as well as subjective items rated on a 1–5 scale including whether the judge was perceived to be treating the defendant with respect, listening to the defendant, and treating the defendant fairly. Internal consistency for the objective items was good (alpha=.80) and very good for the subjective items (alpha=.89). The Judge Subscale was specifically created by combining the sum of the objective and subjective items. Inter-rater reliability was not assessed for the Courtroom Observation Survey, however, research assistants were initially trained by senior team members in a joint court observation, and met regularly to discuss their observations and discuss the extent to which specific types of behaviors would correspond to different ratings for the subjective items.

2.2.2. Procedural justice and reactions to court experience—Two self-report measures were used to assess thematic components of procedural justice: the Perceptions of Procedural Justice scale (PPJ; Cascardi et al., 2000; Poythress et al., 2002), and a 16-item scale developed by M. Somjen Frazer at Center for Court Innovation (Frazer, 2006). In addition, we administered the Impact of Hearing (IOH; adopted from Poythress et al., 2002) as a measure of affective reactions to the court experience. On the PPJ, participants are asked to rate on a 7 point Likert scale the degree to which (1) they had an opportunity to tell the judge about their personal and legal circumstances, (2) they felt that the judge seemed genuinely interested in them as a person, (3) the judge treated them with respect, (4) the judge treated them fairly, (5) they were satisfied with how the judge treated them and dealt with their case, and (6) they were satisfied with the decisions made regarding their case. The Cronbach's alpha calculated among the current sample (alpha=.71) suggests an acceptable degree of internal consistency among PPJ scale items.

Frazer's MHC procedural justice measure (henceforth represented by the acronym MHC-PJ) was designed to tap notions of fairness, respect, dignity, and voice in a problem-solving court setting. The measure does not assume that procedural justice sentiment will be accorded to each of the court players equally, and is therefore comprised of judge, prosecutor, defense attorney, and court personnel subscales. The measure consists of 16

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items on a 5-point Likert scale (strongly disagree to strongly agree). The MHC-PJ scale demonstrated good internal consistency (alpha=.84).

The 6-item IOH seeks to assess how participants felt after their experiences with the court. On a 7-point Likert scale, participants rate whether they felt (1) worse or better, (2) more upset or more calm, (3) less respected or more respected, (4) more confused or more informed, (5) less hopeful or more hopeful, and (6) good or bad in comparison to how they felt prior to court. The IOH aims to target participants' sentiment regarding the totality of the court experience. At baseline, participants were instructed to rate these items based on their initial court appearance. On follow-up, participants were only told to rate these items based on "your experiences with the Mental Health Court," thereby providing a snapshot of all MHC interactions from intake to time of follow-up interview. The IOH demonstrated good internal consistency in the current study (alpha=.84).

2.2.3. Psychiatric symptoms and perceived recovery—The Colorado Symptom Index (CSI; Shern et al., 1994) is a 16-item self-report measure of psychiatric symptoms that has been widely used among diverse psychiatric research samples. Boothroyd and Chen (2008) established a cut-off score of 30 to indicate the probable functional impairment and a need for additional psychiatric assessment. Participants in this sample were highly symptomatic at baseline (mean (SD)=40.61(14.70), SE=2.08, range=15–71). Sixty-six percent of the sample scored at or above the cutoff of 30 recommended by Boothroyd and Chen (2008) as a marker of clinically significant symptoms. Of those 66% of participants, 64% had scored at or above 45, suggesting a highly symptomatic defendant population. The measure's reported specificity (.68) and sensitivity (.76) further suggest that CSI scores above the proposed cut-off are good discriminators of individuals with psychiatric disabilities. Cronbach's alpha has been estimated between .90 and .92 (Boothroyd & Chen, 2008; Conrad et al., 2001), in previous studies, which was also found in the present sample (alpha=.90), indicating a high degree of internal consistency.

The Recovery Assessment Scale (RAS; Corrigan, Salzer, Ralph, Sangster, & Keck, 2004) was used to measure subjective sense of recovery. The RAS is a 41-item self-report scale. The RAS is primarily a measure of the subjective dimensions of recovery, as it does not assess functional improvement. It has been found to have five empirically-derived factors: hope, meaning of life, quality of life, symptoms, and empowerment. In the present study, we found the RAS to have good internal consistency (alpha=.85).

2.3. Procedure

2.3.1. Courtroom observations—Under the supervision of the third author, MA level research assistants conducted regular observations of court proceedings in Brooklyn, Queens, Bronx and Westchester MHCs for a minimum of four court sessions. After initial training, research assistants completed a standardized Courtroom Observation Survey created by the first author for the purpose of the present study. Additional observations were made regarding the defendant–defense attorney interaction and defendant–district attorney interaction. A total of 339 judge–defendant interactions were observed across the 4 courts. The number of interactions rated for each court ranged from 58 to 145.

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2.3.2. Defendant interviews—After establishing contact with the MHC diversion teams, research assistants were asked to be contacted whenever new defendants were enrolled in the MHC. Defendants recently enrolled in the MHC within the past 4 weeks who were no longer incarcerated were considered eligible for the study. An attempt was made to approach all newly enrolled participants at all four MHCs. Baseline interviews were conducted between October 2009 and September 2010; follow-up interviews took place 4 months after the baseline interview (within a 2 week window) and were conducted between March 2010 and December 2010. All interviews were conducted by trained MA-level research assistants. After obtaining informed consents, interviewers verbally administered the previously described measures. Participants were compensated with the equivalent of $20 either in cash or with a gift card, depending on the preference of the diversion team.

3. Results

3.1. Courtroom observations

Table 1 presents the ratings of behaviors consistent with procedural justice as well as time spent per defendant, based on courtroom observations of judge–defendant interactions across the four sites. Scores are mean ratings averaged across all the 339 judge–defendant interactions observed for each court (e.g., 58 in court A). Efforts were made to only observe the resident judge in each court but there were days in which substitute judges presided. For the most part, defendants appeared before the judge as part of a regularly scheduled check-in (77.0%), or—less commonly—for remand or to address diversion noncompliance (10.9%), for their initial appearance after being accepted to the court (5.9%), for sentencing/diversion (4.1%), or graduation (1.2%). Defendants' time before the judge varied considerably (range=0.04–23.15 min), with the mean appearance lasting 2.39 min (SD=2.68). Of the 35 MHC participants who were observed on their initial appearance or for sentencing, judge–defendant interactions lasted between .18 and 23.15 min [mean (SD)=3.81 (4.67)]. Reinspection of the data revealed a total of nine outliers with mean duration greater than 13 min. The nine outliers were treated by replacing their values with the court mean plus 2 times the standard deviation. Removal of the outliers yielded a mean appearance duration of 2.95 min (SD=2.84, range=0.18–11.00 min) for the initial appearance and 2.27 min (SD=2.17, range=.04–11.74) for all appearance types. The participants whose appearance duration was outside the range of all other participants' appearances had been charged with more severe felony crimes. As Table 1 reflects, significant differences emerged in the mean duration defendants appeared before each judge. Follow-up paired *t*-tests revealed that the Judge from Court B spent the least amount of time on each defendant (mean=1.12 min) compared to the judge from Court A (mean=2.38; $t(67.19)=3.34$, $p<.001$]. The judge from Court A spent significantly less time with each defendant than the judge from Court D [mean=3.90, $t(115)=-3.10$, $p<.01$]. The difference in duration for the judges from Courts D and C (mean=3.09) was not significant [$t(85.76)=-1.93$, $p=.056$].

Table 1 also presents findings on procedural justice ratings for judge–defendant interactions. Descriptive statistics (mean (SD)=16.94 (4.15), range=6–21) indicate that, pooled across sites, interactions between defendants and judges were fairly positive experiences in which judges appeared to treat the defendant fairly, with respect, and with regard for his or her

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status in the diversion program. Judge subscale scores varied across sites. Follow-up *t*-tests indicated significant differences between all courts except for Courts B and D ($t(118.39) = -0.394$, $p > .05$), both of which obtained the highest Judge Subscale scores. Court A judge was rated by observers as significantly lower in procedural justice than Court C judge ($t(84.44) = -11.14$, $p < .001$), who was rated as significantly lower than Court B judge ($t(146.81) = -7.56$, $p < .001$) and Court D judge ($t(-4.18) = 91.29$), $p < .001$). The judge's ratings from Court A were particularly low [mean (SD)=10.70 (3.69)]; this judge spoke to defendants less, provided fewer supportive/praise comments, and repeated stock phrases to most defendants. The Court C judge was observed by the researchers as being disrespectful of defendants' time, not exuding warmth, and being slightly more punitive than other judges who were observed.

3.2. Baseline participant interviews

Table 2 presents means, standard deviations and ranges for perceived procedural justice, court experience and outcome variables among participants. Individual responses to almost all items on the PPJ and IOH were negatively skewed, indicating a tendency to favorably rate their perceptions of their interactions with the court and, in particular, with the judge. The exceptions to this trend were bimodal distributions found on the following items: PPJ Item 1: “I had the chance to tell the judge about my personal or legal situation” (mean=3.58). Nearly half of the participants (46%) responded “Not a Bit,” while 32% responded “Definitely.” On PPJ Item 2 (“The judge seemed genuinely interested in me as a person”) responses were almost equally distributed across the scale anchors (1, 4, and 7), with 7 being the modal response. Participants from Court B were significantly less likely to respond “Not at all” to this question than participants from Court A. No other significant differences in response style were noted across sites. Ratings on the IOH were in a similar range [mean (SD)=31.95 (8.57)], although scores on the IOH were not normally distributed [$D(49) = .144$, $p < .05$] due to a ceiling effect. Participants typically felt better and more informed following their initial court appearance than they had prior to their appearance. This rating may indicate a positive experience, but may also be indicative of improvement relative to their level of confusion and apprehension prior to their appearance. There was no significant difference between courts A and B on the IOH [$H(3) = 1.49$, $p > .05$].

Scores on the MHC-PJ scale are reported as percentage scores, with 100% indicating the highest possible levels of procedural justice. Total scores were normally distributed [$D(50) = 0.105$, $p > .05$)] and did not differ significantly between courts [$t(38) = -.988$, $p > .05$]. The Judge Subscale had a potential range of 10 to 50; participants at baseline had a mean subscale score of 37.80 (SD=5.99, range=18–50). Scores were non-normally distributed due to scores clustering around the higher range. There were also no significant differences in the baseline rating of the MHC judge (Kruskal–Wallis $p > .05$).

As previously stated, scores on the CSI are indicative of clinically significant symptoms for the majority of participants. Participants' pooled scores on the CSI were normally distributed [$D(50) = 0.105$, $p > .05$)] and there was no significant difference between courts A and B [$t(39) = 1.09$, $p > .05$]. The mean total score for the RAS indicates that defendants held a somewhat optimistic view of mental illness and their prospects for recovery. Although one

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could not conclude that such attitudes are an artifact of being diverted, it is interesting to note such relatively high RAS scores at the point of diversion.

3.3. Procedural justice and court perception correlates

Table 3 presents a correlation matrix of all scales at baseline. As expected, the PPJ and IOH total scores demonstrated a significant positive correlation. Recall that the IOH items tap the emotional reaction to the court experience, whereas the PPJ asks about perceptions of fairness, respect, and voice. Where the PPJ is high, we would expect the IOH to be high as well. Our data bear this out. The same is true for correlations between the MHC-PJ scale with PPJ and IOH. As can be seen in Table 3, two of the measures of procedural justice (the MHC-PJ and the PPJ) were both significantly associated with participant perceptions of recovery, indicating that participants who perceived more procedural fairness on these scales also tended to perceive more hope and empowerment. In addition, the IOH was found to be significantly negatively associated with psychiatric symptoms, indicating that participants who were more upset by the court experience also tended to have more psychiatric symptoms.

3.4. Association between observations and baseline defendant perceptions

We next examined correlations between observer rated and defendant perceived procedural justice in order to assess whether the perceptions of MHC participants and our raters were discrepant. To examine the association between participant-rated procedural justice and observer rated judicial behavior for participants' respective courts, we used the mean score for judicial behavior in each court (see “Judge PJ Ratings” in Table 2), linked the score to the individual level data file (e.g., a participant in Court B would have the mean rating for Court B linked to his or her individual data scores), and computed correlation coefficients for the relationship between individual level and court rated procedural justice. We found no significant relationship between observer ratings and individual variability in the procedural justice scales used in our study, suggesting that the differences in court practice noted by our observers were not reflected in defendant perceptions of procedural justice.

3.5. Follow-up interviews

Change scores for each measure of interest were calculated for participants who completed follow-up interviews by subtracting follow-up scores from baseline scores. Repeated measures ANOVAs were used to examine within subject change. As seen in Table 4, defendants' perceptions of procedural justice, as measured by the PPJ, increased significantly over time (mean change=3.5 (7.51), $p<.05$). Ceiling effects likely prohibited significant change in baseline to follow-up scores on the IOH; however, it is notable that the IOH trended toward a significant increase despite the fact that initial scores were high. Self-reported psychiatric symptoms decreased significantly over time, while the RAS increase only trended toward significance.

Finally, we examined the correlations between change scores in the different variables. As can be seen in Table 5, over time, increases in procedural justice perceptions were related to decreases in self-reported symptoms. Changes in procedural justice and symptoms were not

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related to increases in recovery, although there was a trend for RAS to increase as symptoms decreased.

4. Discussion

The current study represents an effort to integrate MHC observational data with structured interviews with defendants to improve our understanding of whether and how procedural justice functions within the context of a mental health diversion program. In addition, this study aimed to identify differences in how judges operate their respective courtrooms in four NYC-area MHCs and whether these differences influenced participants' perceptions of their experiences.

We noted significant differences between the practices of the judges of two of the four courts. The judge from Court A was significantly less likely to speak with defendants and make familiar, supportive or praising comments. Such comments are conceptually consistent with the concept of recovery-oriented practices among clinicians (O'Connell et al., 2005). Judges who make supportive and familiar comments are indicating to defendants that they see them as human beings and conveying hope that can plausibly increase participants' own beliefs in their ability to recover. Conversely, the judge from Court C was observed by the researchers as demonstrating fewer characteristics that are consistent with procedural justice principles (namely, respect). Interestingly, the observed discrepancy between these two judges in particular did not seem to be consonant with defendants' perceptions. There are several possible explanations for the absence of significant findings in this area. MHC defendants are typically not first time offenders, and, by virtue of their diagnosis of a SMI, may have histories of extensive interactions with mental health professionals and affiliate staff. Thus, they may have histories of being institutionalized in settings that have historically not emphasized voice, respect, dignity, or absence of coercion. MHC participants may therefore make judgments of how they were treated upon entrance to the MHC court that are relative to prior treatment by mainstream criminal courts, law enforcement, civil commitment panels, and hospital staff. Relatedly, it is quite possible that feelings of respect, fairness, and voice must meet a higher threshold among observers than among our participants. An additional consideration is that the sample size of defendants may not have been sufficient to detect a perceived difference between the courts, particularly if the range was already restricted because of generally positive sentiment toward the court. Finally, it should be noted that observers were not able to observe interviewed participants' court appearances. Although this limits the extent to which we may extrapolate our observations of courtroom experiences to interviewed participants, we would expect minimal differences between the interviewed and observed groups because data collection for both groups was completed in close temporal proximity at each site. Nevertheless, it is still noteworthy that courts were rated as significantly different by observers.

Another important finding related to procedural justice in the MHC context was the negative association between change in defendant ratings of procedural justice and change in symptom severity. Despite a lack of association between the procedural justice measures and psychiatric symptoms at baseline, increases in procedural justice were associated with

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decreases in symptoms over the follow-up period, which suggests that procedural justice may be an important point of intervention for MHC/diversion staff. MHC research to-date has been plagued by a lack of control for type, dose, duration, and quality of the treatment enrollees receive while in the diversion program. With replication, this finding may suggest an opportunity to increase the efficacy of MHCs. The more symptomatic enrollees were also less optimistic about their potential for recovery; instilling hope early on may therefore be an important function of the diversion staff. Participants who reported high levels of procedural justice also reported high levels of optimism toward their recovery.

We selected two measures to assess procedural justice in the current investigation: the PPJ and the MHC-PJ. We found that the PPJ demonstrated acceptable internal consistency but was surpassed by the more comprehensive MHC-PJ scale. Minor revisions of the MHC-PJ scale (specifically, removal or rewording of Item 23) may improve reliability still. Future studies of the psychometric properties of the MHC-PJ used in the current study would be particularly helpful in a MHC context, as this scale expounds on the PPJ by eliciting procedural justice perceptions toward the judge, the prosecutor, the defense attorney, and other court personnel. The high correlation (r=.67) between the MHC-PJ and PPJ indicates convergent validity between the two scales. Convergent validity of these scales bolsters our understanding of these scales measuring different aspects of the same underlying construct of procedural justice.

4.1. Limitations

Efforts were made to recruit participants who were observed during the courtroom observations for defendant interviews or match observed participants with interviewed participants on key variables. Such efforts proved logistically prohibitive, so observed and interviewed samples—while they may overlap—should be considered independent. In addition, as previously reported, most courtroom observations were of regular check-ins rather than initial appearances; sentencing and arraignments were infrequently observed (n=35). Thus, for the most part, participant baseline ratings of procedural justice were compared to observers' ratings at subsequent court appearances. As witnessed among our defendant sample, procedural justice ratings tended to increase as defendants engaged in the diversion program. Future studies attempting to analyze the correlation between observer and defendant perceptions of the MHC experience would benefit from conducting observations of all interviewed defendants from initial appearance through graduation (or attrition). Despite this limitation, observations were conducted in close temporal relation to defendant interviews in the respective courts, so it is likely that overlap occurred.

Interviews were conducted—as space permitted—in private court or diversion program offices. It is possible that in spite of the oral administration of the Informed Consent, participants perceived that interviewers were affiliated with the court or diversion staff and therefore inflated their responses. Even if court affiliation was not a concern for participants, social desirability remains a concern. These concerns are somewhat abated by our participants' relatively lower scores on the PPJ and IOH compared to those of the misdemeanants surveyed in Poythress et al. (2002) study. In addition, our sample's scores on these measures were consistent with those of a similar sample (Barber-Rioja et al., 2012).

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Finally, the small and unequally distributed sample represents another limitation to the current study. Because the same 3-month window of baseline data collection was maintained for each of the four sites, those mental health courts that enrolled few new defendants during the data collection window did not add substantially to the total sample size. Small samples in Courts C and D prohibited their inclusion in between-court analyses. Aggregating data of all four courts obscures the heterogeneity of the defendants and their experiences in each court. This small sample of MHC participants was further reduced by attrition on follow-up, thereby attenuating the study's statistical power.

4.2. Future directions

This study represents a first attempt to depict how judges of different mental health courts are behaviorally consistent with procedurally just practices and how these behaviors are then interpreted by MHC participants. The question of how specific judicial actions relate to defendants' perceptions of procedural justice remains to be seen. For instance, we cannot say, from the data, whether the nature of judges' comments was more or less influential than the fact that the judge made eye contact with a defendant.

Similarly, warmth was a noted difference between judges across sites, yet the question of whether and how warmth factors in to perceptions of procedural justice has been unexplored. If warmth is an important determinant, what is said or done may be just as important as *how* words and actions are conveyed. In a court setting premised on therapeutic jurisprudence, warmth may be a particularly important ingredient. Fiske and Fiske (2007) describe warmth as “friendly, nice, sincere, and trustworthy” (p. 299). The authors note four relational models under which warmth and competency operate to form the core components of how people respond to others. Using the Relational Models Theory (RMT) and Social-Cognitive Content Model (SCCM), which theorizes that people already view social superiors as competent, the authors assert that warmth is an important component in relationships with a power differential and may predict behavior: high competence and high warmth seems to elicit helping and association, whereas high competence and low warmth elicits active harm and passive association. Applied to a MHC setting, a judge (inherently deemed competent according to the RMT and SCCM models) who does not exude warmth may elicit resistance to the diversion process and an us-versus-them mentality. One who is high on warmth, on the other hand, may engender an associative identification with the diversion team and a consequent compliance with the requirements of diversion. Future research would benefit from assessing whether and why MHC judges are perceived by defendants as warm and whether perceptions of warmth factor in to perceptions of procedural justice or are independently correlated with outcomes.

Future studies should also analyze the main or mediating effects of criminal justice related variables, such as misdemeanor versus felony charge. In addition, future studies should analyze whether baseline procedural justice scores predict diversion compliance and recidivism and to further assess the relationship between baseline and follow-up procedural justice scores. Procedural justice in this study was found to be negatively correlated with symptom severity. Further research that includes defendants with mental illness processed in a mainstream criminal court is needed to clarify the precise nature of the relationship

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between procedural justice and symptom severity at follow-up. Should levels of procedural justice be found to predict symptom severity in controlled research, enhancing procedural justice in defendant interactions might provide an opportunity to improve outcomes among diverted defendants. Moreover, should reductions in recidivism and diversion noncompliance also consistently positively correlate with procedural justice at baseline and/or follow-up, judicial guidelines should incorporate procedural justice-consistent dictums in recommendations for best practices.

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References

Barber-Rioja V, Dewey L, Kopelovich S, Kucharski LT. The utility of the HCR-20 and PCL:SV in the prediction of diversion non-compliance and re-incarceration in diversion programs. Criminal Justice and Behavior: Special Diversion Issue. 2012; 39:475–492. http://dx.doi.org/10.1177/0093854811432609.

Bess, G. Mentally Ill Offender Crime Reduction (MIOCR) Grant Program: Butte County Forensic Resource Team Final Program Report. 2004. Retrieved from http://www.garybess.com/samples/Applied_Research_Mentally_Ill.pdf

Boothroyd RA, Chen HJ. The psychometric properties of the Colorado Symptom Index. Administration and Policy in Mental Health. 2008; 35:370–378. http://dx.doi.org/10.1007/s10488-008-0179-6. [PubMed: 18561020]

Cascardi M, Poythress NG, Hall A. Procedural justice in the context of civil commitment: An analogue study. Behavioral Sciences & the Law. 2000; 18:731–740. http://dx.doi.org/10.1002/bsl.421. [PubMed: 11180419]

Christy A, Poythress NG, Boothroyd RA, Petrila J, Mehra S. Evaluating the efficiency and community safety goals of the Broward County Mental Health Court. Behavioral Sciences & the Law. 2005; 23:227–243. http://dx.doi.org/10.1002/bsl.647. [PubMed: 15818603]

Conrad KJ, Yagelka JR, Matters MD, Rich AR, Williams V, Buchanan M. Reliability and validity of a Modified Colorado Symptom Index in a national homeless sample. Mental Health Services Research. 2001; 3:141–153. http://dx.doi.org/10.1023/A:1011571531303. [PubMed: 11718206]

Corrigan PW, Salzer M, Ralph RO, Sangster Y, Keck L. Examining the factor structure of the Recovery Assessment Scale. Schizophrenia Bulletin. 2004; 30:1035–1041. (Retrieved from EBSCOhost). [PubMed: 15957202]

Department of Health and Human Services. President's New Freedom Commission on Mental Health, Final Report 2003. Substance Abuse and Mental Health Services Administration; Rockville, MD: U.S. Department of Health and Human Services; 2003. Achieving the promise: Transforming mental health care in America.

Erickson SK, Campbell A, Lamberti JS. Variations in Mental Health Courts: Challenges, opportunities, and a call for caution. Community Mental Health Journal. 2006; 42:335–344. http://dx.doi.org/10.1007/s10597-006-9046-7. [PubMed: 16874463]

Fiske, AP.; Fiske, ST. Social relationships in our species and culture. In: Kitayama, S.; Cohen, D., editors. Handbook of Cultural Psychology. New York: The Guilford Press; 2007. p. 283-306.

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

Fisler C. Building trust and managing risk: A look at a felony mental health court. Psychology, Public Policy, and Law. 2005; 11:587–604. http://dx.doi.org/10.1037/1076-8971.11.4.587.

Frailing K. How mental health courts function: Outcomes and observations. International Journal of Law and Psychiatry. 2010; 33:207–213. (Retrieved from EBSCOhost). [PubMed: 20667593]

Frazer, MS. The impact of the community court model of defendant perceptions of fairness. New York: The Center for Court Innovation; 2006. (Retrieved from http://www.courtinnovation.org/sites/default/files/Procedural_Fairness.pdf)

Galon PA, Wineman N. Coercion and procedural justice in psychiatric care: State of the science and implications for nursing. Archives of Psychiatric Nursing. 2010; 24:307–316. http://dx.doi.org/10.1016/j.apnu.2009.12.005. [PubMed: 20851322]

Greer, A.; O'Regan, M.; Traverso, A. Therapeutic jurisprudence and patients' perceptions of procedural due process of civil commitment hearings. In: Wexler, DB.; Winick, BJ., editors. Law and Therapeutic Key. Durham, NC: Academic Press; 1996.

Griffin PA, Steadman HJ, Petrila J. The use of criminal charges and sanctions in Mental Health Courts. Psychiatric Services. 2002; 53:1285–1289. http://dx.doi.org/10.1176/appi.ps.53.10.1285. [PubMed: 12364676]

Hiday VA, Ray B. Arrests two years after exiting a well-established mental health court. Psychiatric Services. 2010; 61:463–468. http://dx.doi.org/10.1176/appi.ps.61.5.463. [PubMed: 20439366]

Lerner Wren G. Mental Health Courts: Serving justice and promoting recovery. Loyola University Chicago School of Law, Beazley Institute for Health Law and Policy. Annals of Health Law. 2010; 19:577–593. [PubMed: 21456399]

Lind, EA.; Tyler, TR. The social psychology of procedural justice. New York, NY, US: Plenum Press; 1988.

Manasse M. The dilemmas and opportunities of collaboration: Drawing lessons from one mental health court. Journal of Court Innovation. 2009; 2:157–190. (Retrieved from http://www.courts.state.ny.us/court-innovation/Spring-2009/JCISpring-2009.pdf).

McKenna BG, Simpson AIF, Coverdale JH. Best practice management strategies for mental health nurses during the clinical application of civil commitment: An overview. Contemporary Nurse. 2006; 21:62–70. http://dx.doi.org/10.1046/j.1440-1614.2000.00744.x. [PubMed: 16594883]

McKenna BG, Simpson AIF, Coverdale JH. What is the Role of Procedural Justice in Civil Commitment? Australian and New Zealand Journal of Psychiatry. 2000; 32:671–676. http://dx.doi.org/10.1046/j.1440-1614.2000.00744.x. [PubMed: 10954400]

Moore ME, Hiday V. Mental health court outcomes: A comparison of re-arrest and re-arrest severity between mental health court and traditional court participants. Law and Human Behavior. 2006; 30:659–674. http://dx.doi.org/10.1007/s10979-006-9061-9. [PubMed: 17053948]

O'Connell M, Tondora J, Evans A, Croog G, Davidson L. From rhetoric to routine: Assessing recovery-oriented practices in a state mental health and addiction system. Psychiatric Rehabilitation Journal. 2005; 28:378–386. http://dx.doi.org/10.2975/28.2005.378.386. [PubMed: 15895922]

O'Keefe, K. The Brooklyn Mental Health Court evaluation: Planning, implementation, courtroom dynamics, and participant outcomes. 2006. Retrieved from Center for Court Innovation website: http://www.courtinnovation.org/research/brooklyn-mental-health-court-evaluation-planning-implementation-courtroom-dynamics-and-part?url=research%2Fbrowse%2Fall&mode=browse&type=all&topic=All&author=969

O'Donoghue BB, Lyne JJ, Hill MM, Larkin CC, Feeney LL, O'Callaghan EE. Physical coercion, perceived pressures and procedural justice in the involuntary admission and future engagement with mental health services. European Psychiatry. 2011; 26:208–214. http://dx.doi.org/10.1016/j.eurpsy.2010.01.014. [PubMed: 20538433]

Office of Mental Health. Serious and persistent mental illness. n.d. Retrieved from http://www.omh.state.ny.us/omhweb/guidance/serious_persistent_mental_illness.html

Onken, SJ.; Dumont, JM.; Ridgway, P.; Dornan, DH.; Ralph, RO. A National Research Project for the Development of Recovery Facilitating System Performance Indicators. Prepared for National Technical Assistance Center for State Mental Health Planning & National Association of State Mental Health Program Directors. 2002. Mental health recovery: What helps and what hinders?.

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Poythress NG, Petrila J, McGaha A, Boothroyd R. Perceived coercion and procedural justice in the Broward Mental Health Court. International Journal of Law and Psychiatry. 2002; 25:517–533. http://dx.doi.org/10.1016/S0160-2527(01)00110-8. [PubMed: 12371265]

Redlich AD, Steadman HJ, Monahan J, Robbins PC, Petrila J. Patterns of practice in Mental Health Courts: A national survey. Law and Human Behavior. 2006; 30:347–362. http://dx.doi.org/10.1007/s10979-006-9036-x. [PubMed: 16775775]

Sarteschi CM, Vaughn MG, Kim K. Assessing the effectiveness of mental health courts: A quantitative review. Journal of Criminal Justice. 2011; 39:12–20. http://dx.doi.org/10.1016/j.jcrimjus.2010.11.003.

Shern DL, Wilson NZ, Coen AS, Patrick DC, Foster M, Bartsch DA, et al. Client outcomes II: Longitudinal client data from the Colorado Treatment Outcome Study. The Milbank Quarterly. 1994; 72:123–142. http://dx.doi.org/10.1097/00005650-200011000-00008. [PubMed: 8164605]

Steadman HJ, Redlich A, Callahan L, Robbins P, Vesselinov R. Effect of mental health courts on arrests and jail days: A multisite study. Archives of General Psychiatry. 2011; 68:167–172. http://dx.doi.org/10.1001/archgenpsychiatry.2010.134. [PubMed: 20921111]

Swartz MS, Wagner HR, Swanson JW, Elbogen EB. Consumers' perceptions of the fairness and effectiveness of mandated community treatment and related pressures. Psychiatric Services. 2004; 55:780–785. [PubMed: 15232017]

Thibaut, J.; Walker, L. Procedural justice: A psychological analysis. Hillsdale, NJ: Erlbaum; 1975.

Tyler TR. What is procedural justice? Criteria used by citizens to assess the fairness of legal procedures. Law & Society Review. 1988; 22:103–136. (Retrieved from EBSCOhost).

Tyler TR. The psychological consequences of judicial procedures: Implications for civil commitment hearings. Southern Methodist University Law Review. 1992; 46:401–413. as cited in: Winick, B.J. (1999). Therapeutic Jurisprudence and the Civil Commitment Hearing. Journal of Contemporary Legal Issues, 10, 37–60.

Tyler TR. Policing in black and white: Ethnic group differences in trust and confidence in the police. Police Quarterly. 2005; 8:322–336. http://dx.doi.org/10.1177/1098611104271105.

Tyler, TR. New approaches to justice in the light of virtues and problems of the penal system. In: Oswald, ME.; Bieneck, S.; Hupfeld-Heinemann, J.; Oswald, ME.; Bieneck, S.; Hupfeld-Heinemann, J., editors. Social psychology of punishment of crime. New York, NY US: John Wiley & Sons Ltd; 2009. p. 19-37.

Tyler, T.; De Cremer, D. Ethics and rule adherence in groups. In: De Cremer, D., editor. Psychological perspectives on ethical behavior and decision making. Charlotte, NC US: Information Age Publishing; 2009. p. 215-232.

Wales HW, Hiday V, Ray B. Procedural justice and the mental health court judge's role in reducing recidivism. International Journal of Law and Psychiatry. 2010; 33:265–271. http://dx.doi.org/10.1016/j.ijlp.2010.06.009. [PubMed: 20659768]

Watson A, Angell B. Applying procedural justice theory to law enforcement's response to persons with mental illness. Psychiatric Services. 2007; 58:787–793. http://dx.doi.org/10.1176/appi.ps.58.6.787. [PubMed: 17535938]

Watson AC, Angell B, Vidalon T, Davis K. Measuring perceived procedural justice and coercion among persons with mental illness in police encounters: The Police Contact Experience Scale. Journal of Community Psychology. 2010; 38:206–226. http://dx.doi.org/10.1002/jcop.20360.

Winick BJ. Outpatient commitment: A therapeutic jurisprudence analysis. Psychology, Public Policy, and Law. 2003; 9(1–2):107–144. http://dx.doi.org/10.1037/1076-8971.9.1-2.107.

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Table 1

Observer ratings of judges by court.

	Court A (N=58) Mean (SD)	Court B (N=144) Mean (SD)	Court C (N=77) Mean (SD)	Court D (N=59) Mean (SD)	Total (N=338) Mean (SD)	Kruskal–Wallis test
Duration of appearance (minutes)	2.38 (2.40)	1.12 (1.12)	3.09 (1.62)	3.90 (2.88)	2.27 (2.17)	$p<.001$
Judge PJ rating	10.70 (3.69)	18.59 (3.10)	17.10 (2.31)	18.76 (2.59)	16.94 (4.18)	$p<.001$

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Table 2

Means, standard deviations and ranges for defendant interview measures.

Measure	Mean	SD	Range
PPJ	31.59	7.92	8–42
IOH	31.95	8.57	10–42
MHC-PJ (%)	73.78	18.67	35–99
CSI	40.61	14.70	15–71
RAS	164.55	20.38	123–205

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Table 3

Correlation matrix of measures at baseline.

	PPJ	IOH	MHC-PJ	CSI	RAS
PPJ	–				
IOH	.5253	–			
MHC-PJ	.6713	.4503	–		
CSI	−.199	−.3313	−.126	–	
RAS	.3073	.223	.3933	−.3933	–

* $p<.05$.

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Table 4

Baseline to follow-up change scores.

Measure	Mean change	SD	n
PPJ	3.53	7.51	38
IOH	2.05	9.89	38
MHC-PJ	−0.35	12.37	37
CSI	−5.933	9.78	38
RAS	2.04	19.44	38

* $p<.05$.

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Table 5

Correlations of change scores.

	ΔPPJ	ΔIOH	Δ-PJ	ΔCSI	ΔRAS
ΔPPJ	–				
ΔIOH	.299	–			
ΔMHC-PJ	.529*	.233	–		
ΔCSI	−.349*	−.307	−.378*	–	
ΔRAS	.212	.078	−261	−.240	–

* $p<.05$.