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Predictors of Mental Health Court Graduation

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Mental health courts (MHCs), nontraditional problem-solving courts designed to address underlying causes of offending rather than apportion guilt and punishment, have been reported to reduce offending among persons with mental illness and consequently have been spreading. Graduation from a MHC has been found to be a major predictor of reduced recidivism; yet few studies have examined factors affecting MHC graduation. This study examines what participants brought to MHC, their processing in MHC, and their behaviors during MHC. It found that noncompliant participant behaviors during MHC had the strongest impact on graduation, increasing the odds of failure to graduate and reducing, if not eliminating, the direct effects on completion of the risk factors participants brought into court.

Keywords: co-occurring substance abuse, diversion, graduation, mental health courts, severe mental illness

The past quarter century has witnessed the growth of specialty courts as alternatives to traditional criminal courts for select offender groups (Cullen, 2013; Nolan, 2003). Led initially by local judges in scattered jurisdictions across the United States and later promoted by federal and other organized programs, these courts focus on problem solving to alleviate underlying causes of offending rather than on apportioning guilt and punishment (Almquist & Dodd, 2009; Developments in the Law, 2008; Watson, Luchins, Hanrahan, Heyrman, & Lurigio, 2001).

A specialty court has a separate docket for the particular offender group with a designated judge who acts as a team leader in working with prosecution and defense attorneys, and community treatment and service providers, to develop and monitor adherence to an individualized treatment and service plan designed to change each participant's offending behavior. The judge in regularly scheduled status hearings holds defendants accountable for their actions, and allots sanctions and incentives designed to encourage changes in behaviors leading to offending and compliance with court mandates. Participation by defendants in all specialty courts is voluntary with the reward of dismissed or reduced charges or sentences, depending on whether the court is pre- or postadjudication (Developments in the Law, 2008; Fisler, 2005; Nolan, 2003).

Mental health courts (MHCs) are one type of specialty court. They share with other specialty courts the basic structure and processes that are different from traditional criminal courts; but they are different from other specialty courts in that they tend to be more understanding of relapses in behavior and consequently are more likely to use incentives rather than sanctions, give more second chances, adjust treatment plans, and use jail as a sanction less frequently (Callahan, Steadman, Tillman, & Vesselinov, 2013; Fisler, 2005; Griffin, Steadman, & Petrila, 2002; Nolan, 2003; Petrila, Poythress, McGaha, & Boothroyd, 2000; Redlich, Steadman, Monahan, Robbins, & Petrila, 2006; Schneider, Bloom, & Heerema, 2007). Although MHCs share commonalities with each other, they vary in the community resources available for treatment and services, carrying capacity, frequency and length of required participation, eligibility, and defendant characteristics.

MHCs are proliferating across the United States and Canada as evidence is accumulating that these courts are succeeding in achievement of their main goal of reducing criminal recidivism (Burns, Hiday, & Ray, 2012; Christy, Poythress, Boothroyd, Petrila, & Mehra, 2005; Dirks-Linhorst & Linhorst, 2012; Frailing, 2010; Herinckx, Swart, Ama, Dolezal, & King, 2005; Hiday & Ray, 2010; Hiday, Wales, & Ray, 2013; McNiel & Binder, 2007; Moore & Hiday, 2006; Steadman, Redlich, Callahan, Robbins, & Vesselinov, 2011). MHC evaluations that have used type of court exit—either graduation or negative termination—as a predictor of reoffending have consistently found graduation to be positively associated with reduced criminal recidivism. By various measures of recidivism (rearrest, number or severity of rearrests, time to rearrest, incarceration, and time incarcerated), participants who successfully complete MHC and graduate are less likely to reoffend than those who do not graduate (Burns et al., 2012; Dirks-Linhorst & Linhorst, 2012; Herinckx et al., 2005; Hiday & Ray, 2010; Hiday et al., 2013; McNiel & Binder, 2007; Moore & Hiday, 2006; Steadman et al., 2011).

Because of the consistent negative association of MHC graduation with criminal recidivism, it is important to understand those

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factors influencing participant likelihood of graduation. However, few studies have empirically examined predictors of MHC graduation and these have not yielded a clear, consistent picture largely due to the omission of potentially important variables in each of these studies (Burns et al., 2012; Dirks-Linhorst, Kondrat, Linhorst, & Morani, 2011; Ray & Dollar, 2013; Redlich et al., 2010; Redlich & Han, 2013). The current article attempts to avoid this problem by including all of the conceptual factors used in the prior studies and using multiple measures of those conceptual factors as possible predictors of graduation from MHC: what participants brought to MHC (their demographics and recent criminal history), participant processing in MHC (time spent in each stage), and participant behaviors during MHC (indicating changing behavior patterns and cooperation, or lack thereof, with MHC mandates). It pays particular attention to whether participant demographics and criminal histories (risk factors) directly affect MHC graduation or whether MHC processing and behavioral variables mediate their potential relationship. We are especially interested in whether the risk factors that participants bring with them into MHC can be overcome with MHC monitoring, supports, treatment, and services to bring about behavior change in a large enough proportion of participants to negate the effect of those risk factors.

Research on Mental Health Court Completion Status

Five studies, thus far, have examined predictors of successfully completing or being negatively terminated from MHC (Burns et al., 2012; Dirks-Linhorst et al., 2011; Ray & Dollar, 2013; Redlich et al., 2010; Redlich & Han, 2013). Four of these studies included basic sociodemographic variables of age, race/ethnicity (or minority status), and gender. First, controlling for a host of processing variables Dirks-Linhorst et al. (2011) found that males and racial minorities were significantly more likely to be terminated from the MHC and more likely to opt-out of the MHC process than White, female defendants. Second, a mixed-method study (Ray & Dollar, 2013), using observations of MHC team meetings to examine how team members evaluate participant behaviors, reported that team members went to greater lengths to contextualize female than male participant noncompliance, thus giving more second chances to females. However, their statistical analysis suggested there was an interaction between gender and race over time in MHC that was associated with patterns of graduation. Third, an analysis of four MHC sites by Redlich et al. (2010) reported that race and gender were not associated with completion, but race was associated with compliance, which was the only significant variable that predicted completion. Finally, a study by Burns and colleagues (2012) reported that neither race nor gender was associated with MHC graduation.

Prior criminal behavior, the best predictor of new offending, was not examined in two of the studies (Redlich et al., 2010; Redlich & Han, 2012) but was positively associated with negative termination in all three studies that included an indicator of it (Burns et al., 2012; Dirks-Linhorst et al., 2011; Ray & Dollar, 2013). Similarly, substance abuse, which commonly co-occurs with severe mental illness and is a major predictor of offending (Hiday & Wales, 2013; Mulvey, Blumstein, & Cohen, 1986; Swartz & Lurigio, 2007; Wilson, Draine, Hadley, Metraux, & Evans, 2011), thus increasing the likelihood of negative termination, was omitted from analysis in all but two of the studies. Both of those studies found it to predict failure to graduate (Burns et al., 2012; Dirks-Linhorst et al., 2011).

Four of these studies included at least one indicator of participant noncompliance with MHC mandates between court entry and exit. Burns et al. (2012), using jail days during MHC supervision, found no effect on graduation. Dirks-Linhorst and colleagues (2011) and Redlich and Han (2013), using rearrest while under court supervision, found it to predict termination; whereas Redlich and colleagues (2010) found their measure of rearrest not to be directly associated with completion. They reported that MHC manager perception of compliance (with judicial orders, community treatment appointments, and taking prescribed medications) was the only predictor of MHC completion.

A final conceptual variable, MHC processing—that is, those processes the court uses with participants—was included in four of the studies but measured so differently that it embodied different meanings and consequently produced different impacts on MHC graduation and termination (see Burns et al., 2012; Dirks-Linhorst et al., 2011; Redlich & Han, 2013; Redlich et al., 2010).

Study Overview

The present study examines data from a large metropolitan preadjudication MHC in the United States with high caseloads that accepts competent severely mentally ill arrestees charged with misdemeanors who have no pending violent felony charge and have had no violent felony conviction in the past 5 years. This MHC is relatively short term, monitoring participants for treatment and behavior compliance at monthly status hearings from 4 to 6 months (in contrast to a year or more in most MHCs). All participants are represented by counsel (public defender, appointed counsel, and third-year law students under supervision) at monthly judicial hearings and in negotiations with the designated prosecutor. All are scheduled to receive weekly or biweekly supervision and case management from the mental health unit of the federal pretrial service that links them to mental health treatment and other services from community providers. Those with comorbid substance abuse also receive weekly drug testing and treatment from the pretrial service's drug program. The court uses positive sanctions in the form of praise and encouragement to give incentives for continued compliance with its orders and negative sanctions in the form of warnings of termination and of return to traditional criminal court for adjudication of their charges. This court does not use jail as a sanction for failure to follow court mandates.

Earlier research examined the impact of this MHC on criminal recidivism a year after exit from MHC for both graduates and noncompleters (Hiday et al., 2013). It reported that MHC participation had a positive effect on reducing the proportion arrested and the number of arrests from 1 year prior to key arrest to 1 year after key arrest disposition (Hiday et al., 2013). It also found that MHC participants had reduced recidivism (proportion arrested, number of arrests, and time to rearrest) in comparison to a control group of MHC-eligible persons not in MHC but under supervision of the same pretrial mental health services unit with the same case management, mental health treatment linkage, and drug testing/treatment. Although both graduates and noncompleters had reduced offending following MHC participation, it was graduates who were responsible for the recidivism differences between MHC participants and the comparison group (Hiday et al., 2013). In the

current article, we examine hypothesized predictors of graduation in this MHC.

Data and Methods

The sample consists of all participants in the first 2 years of the court's operation (October 2007 to November 2009, $N = 408$) with the exception of MHC participants who had administrative closures because of death, sickness, or other ($n = 6$). Sampling excluded referred defendants sent back to traditional criminal court at their first MHC hearing ($n = 37$) and defendants who did not show up for their first MHC hearing ($n = 3$) because neither group became participants. We used administrative data from two sources: the pretrial services agency and the MHC judges. Informed consent was not necessary because all data were de-identified. The universities' and the pretrial services agency's institutional review boards and the MHC judges approved the research.

We first present descriptive statistics of the two MHC exit types, contrasting graduates with those who entered the MHC and were terminated from the court (noncompleters) on three groupings of independent variables: characteristics with which participants enter MHC (sociodemographics and recent criminal history), court processing variables, and measures of participant behaviors during MHC. We then use multivariate analysis to discern which variables impact graduation when the others are controlled.

Measures

The dependent variable in this study is a dichotomous measure of MHC exit: graduation versus noncompletion. Reported graduation rates of those exiting MHC in other studies vary from 19% (Herinckx et al., 2005) to 81% (Redlich et al., 2010) with an average graduation rate of 52% (Burns et al., 2012; Dirks-Linhorst et al., 2011; Dirks-Linhorst & Linhorst, 2012; Herinckx et al., 2005; Hiday & Ray, 2010; Hiday et al., 2013; McNiel & Binder, 2007; Moore & Hiday, 2006; Palermo, 2010; Ray & Dollar, 2013; Redlich et al., 2010).

Six independent variables are used to capture characteristics that participants bring with them into MHC: the sociodemographic variables of (a) age in years; (b) gender (female = 0, male = 1); (c) race (White = 0, non-White = 1.98% of whom were African American, and 1.2%, Hispanic); and recent criminal history variables of (d) offense type of key arrest (drug offense = 1, other = 0); (e) drug use at key arrest (measured by positive urine test the morning after arrest); and (f) number of arrests 2 years prior to key arrest (which does not include key arrest).

Four variables measure participant court processing: (a) Time from key arrest to MHC entry expressed in days. Screening by pretrial services occurs the morning after arrest, followed in the afternoon by arraignment and a pretrial release hearing, at which time defendants with a severe mental illness are released under supervision to a specialized unit of the pretrial service agency serving only those with severe mental illness. Case managers determine which defendants with mental illness are eligible for MHC and make referrals. Best practices recommend diversion as soon as possible but some defendants with severe mental illness are missed in the initial screening and only later placed under the specialized unit's supervision when case managers or counsel detect mental illness. Others initially deemed disappearance risks or remanded to the mental hospital for competency evaluation and restoration are only later sent to the specialized unit from which a MHC referral occurs. (b) Time from MHC entry to Deferred Prosecution Agreement (DPA), which is the formal agreement between each defendant and the prosecution. This MHC allows a participant to begin MHC even when the prosecution has reservations; the prosecution signs a formal agreement after a participant has negative drug tests for two weeks and has successfully been placed with a community provider. (c) Time from MHC entry to exit (expressed in days) and (d) number of MHC hearings.

Finally, four variables are used to capture participant behaviors while under MHC supervision: (a) illegal drug use is measured by the ratio of positive drug tests to the total number of drug tests administered; (b) any failure to appear for a MHC hearing without an acceptable excuse (FTA); (c) number of arrests during MHC participation; and (d) noncompliance with the conditions of the court order as recorded by pretrial services special unit case managers at weekly check-ins measured by the ratio of noncompliant check-ins to total scheduled check-ins. Information on this variable was missing for 105 MHC participants; thus, we run the first set of multivariate models without this variable on the full sample and then run a second set of multivariate models on the smaller subsample of those with case manager compliance data.

Results

The study MHC graduated almost three-fifths of those who entered during its first two years of operation (58.3%), a graduation rate midway in the range reported by other studies. All participants had exited the court by the time of data collection; thus, the remaining 41.7% represents participants who were negatively terminated from MHC, most of whom were sent back to traditional criminal court for adjudication of their cases. A few participants requested the MHC judge to adjudicate their original charges from the key arrest and their cases were disposed of by that judge without returning to the general criminal court docket.

Bivariate Relationships

Table 1 presents graduation and noncompletion by sociodemographic characteristics and criminal history factors. Mean age of both graduates and noncompleters was approximately 41 and both groups had close to an equal split between males and females. Both graduates and noncompleters were overwhelmingly non-White (85.7%, 95.9% respectively) but the smaller proportion of Whites was significantly more likely to graduate ($\chi^2 = 11.34$, $p < .001$, Cramer's $V = 0.17$). Drug offense was the main charge for just over two-fifths of participants (not shown) and those with a drug offense were significantly less likely to graduate than those who had another charge as their main offense (37.3% vs. 62.7%; $\chi^2 = 10.66$, $p < .05$, Cramer's $V = 0.16$). As indicated by a positive drug test at initial screening the morning after key arrest, over half (53.9%) of all participants tested positive for illegal drug use, and those who tested positive were significantly less likely to graduate (40.5% vs. 79.3%; $\chi^2 = 62.79$, $p < .001$, Cramer's $V = 0.39$). Both groups averaged fewer than two arrests in the prior 2 years but there was a significant difference between the two groups with noncompleters averaging more arrests than graduates (1.92 and

Table 1
Sample Characteristics

Characteristic	Noncompleter		Graduate		Total
	M	*SD*	*M*	*SD*	
Age	41.4	10.8	41.5	11.2	408
Gender	N	%	N	%	
Male	81	39.7%	123	60.3%	204
Female	89	43.6%	115	56.4%	204
Race[b***]					
Non-White	163	44.4%	204	55.6%	367
White	7	17.1%	34	82.9%	41
Drug use at key arrest[b***]					
Yes	131	59.5%	89	40.5%	220
No or unknown	39	20.7%	149	79.3%	188
	M	*SD*	*M*	*SD*	
Number of arrests (1 year)	1.5	0.9	1.3	0.8	408
Number of arrests (2 years)[a*]	1.9	1.4	1.6	1.2	408
Number of arrests count (1 year)[b*]	N	%	N	%	
0 prior arrests	5	71.4%	2	28.6%	7
1 prior arrest	111	37.6%	184	62.4%	295
2 or more prior arrests	54	50.9%	52	49.1%	106
Number of arrests count (2 year)[b*]					
0 prior arrests	1	100.0%	0	0.0%	1
1 prior arrest	88	36.7%	152	63.3%	240
2 or more prior arrests	81	48.5%	86	51.5%	167
Total	170	41.7%	238	58.3%	408

[a] *t*-test. [b] χ^2.
* $p < .05$. ** $p < .01$. *** $p < .001$.

1.64, respectively; $t = 2.19$, $p < .05$, $d = 0.17$, 95% confidence interval [CI] [-0.04, 0.40]). Most of both groups had only one prior arrest and were arrested only in the year before their key arrest.

Table 2 presents court processing and participant behaviors during MHC of graduates and noncompleters. The first, indicating how long it took for a participant to enter MHC after the key arrest, shows no difference between graduates and noncompleters. MHC participants in both groups averaged 4 months before entering MHC (130.2 days for graduates; 122.5 days for noncompleters). However, there was great variation in days to MHC entry as can be seen by the large standard deviation of each group. Another analysis found that almost half of the time between key arrest and MHC entry could be accounted for by delayed placement with the specialized unit (57.8 days, see Hiday et al., 2013).

Not all MHC participants were able to obtain a DPA from the prosecutor. Of those who signed a DPA ($n = 299$; 73.3%), graduates averaged 1 month between MHC entry and signing; that is, on average they signed the formal agreement to participate in MHC at their second hearing in MHC, whereas those who ended up being noncompleters took twice as long (31.44 days vs. 61.48 days; $t = 4.14$, $p < .01$, $d = -0.60$, 95% CI [−6.30, 16.57]). Those who did not sign ($n = 109$; 26.7%) averaged three MHC meetings and 90.23 days in MHC before being terminated and returned to traditional criminal court.

Graduates spent significantly more time in MHC than noncompleters, averaging approximately 1 month longer (152.20 days compared to 128.27 days; $t = 3.39$, $p < .01$, $d = 0.34$, 95% CI [−6.53, 13.60]) and they averaged almost one more MHC hearing. Longer time in court for graduates is to be expected as noncompleters tended to be terminated because of failure to comply with court ordered treatment and behavioral mandates before they successfully reached the minimum completion time.

A significantly larger proportion of noncompleters failed to appear (FTA) for one or more MHC hearings. Approximately 30% of noncompleters had at least one FTA compared to only 2% of graduates ($\chi^2 = 63.42$, $p < .001$, Cramer's $V = 0.39$). Likewise, a significantly larger proportion of noncompleters was arrested during MHC (33.5% vs. 12.2%; $\chi^2 = 27.16$, $p < .001$, Cramer's $V = 0.26$). A few of each group had more than one FTA or more than one arrest and those with more arrests were more likely to have FTAs ($r = .25$, $p < .001$).

Graduates and noncompleters averaged approximately the same number of drug tests while in MHC but noncompleters had more than double the number of positive drug tests as graduates (5.13 vs. 1.94; $t = 9.52$, $p < .001$, $d = 1.15$, 95% CI [0.70, 1.48]). The positive drug test ratio is also significantly greater for noncompleters than graduates (0.48 vs.0.06, $t = 9.40$, $p < .001$, $d = 1.02$, 95% CI [0.93, 1.04]).

Of the 303 subsample (74.3%) with information on case manager meetings, there is no significant difference by exit type in mean number of scheduled meetings with case managers in the pretrial services specialized unit for defendants with mental illness; however, there is a significant difference in the mean number of meetings with noncompliance recorded (5.04 for noncompleters vs. 3.23 for graduates; $t = 2.70$, $p < .01$, $d = 0.31$, 95% CI [−0.74, 1.13]). Noncompleters were noncompliant just over one third of the time and graduates were noncompliant less than half as much as can be seen in the ratios displayed in Table 2 (0.36 vs. 0.14, $t = 6.25$, $p < .001$, $d = 0.74$, 95% CI [0.68, 0.77]).

Table 2
Court Process and Offender Behavior in MHC

	Noncompleter		Graduate	
	M	*SD*	*M*	*SD*
Days key arrest to MHC entry	122.46	96.59	130.19	114.70
Days from MHC entry to DPA[a**]	61.48	68.40	31.44	44.89
Days in MHC[a**]	128.27	88.19	152.20	54.06
MHC hearings[a**]	4.16	2.91	4.94	1.74
Case management				
CM meetings	10.58	8.26	10.81	8.77
Noncompliant CM meetings[a**]	5.04	6.27	3.23	5.38
Noncompliant ratio[a***]	0.36	0.38	0.14	0.21
Drug testing				
Drug tests for those tested	11.62	10.32	12.19	10.39
Positive drug tests[a***]	7.35	6.53	2.49	4.23
Positive drug test ratio[a***]	0.48	0.62	0.06	0.13
	N	%	N	%
Any FTA during MHC[b***]	50	29.4%	5	2.1%
FTA Count[b***]				
0 FTA	120	34.0%	233	66.0%
1 FTA	43	93.5%	3	6.5%
2 FTA	7	77.8%	2	22.2%
Any arrest during MHC[b***]	57	33.5%	29	12.2%
Arrests count[b***]				
0 arrests	113	35.1%	209	64.9%
1 arrest	39	62.9%	23	37.1%
2 or more arrests	18	75.0%	6	25.0%

Note. MHC = mental health court; DPA = Deferred Prosecution Agreement; FTA = failure to appear for a MHC hearing without an acceptable excuse.
[a] *t*-test. [b] χ^2.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Multivariate Analysis

To discern the relative influence of participant characteristics, criminal history, court processing, and participant behaviors during MHC on the likelihood of graduation, we used logistic regression with two multivariate analyses, one of all MHC participants and one of the smaller subsample with information on case manager check-ins. We used stepwise regression to examine the impact of the three groups of variables sequentially as they occurred, beginning with what participants brought with them to MHC (sociodemographic characteristics and criminal history). We then added court processes and participant behaviors. We omitted two processing variables from these analyses: days from MHC entry to DPA because more than a quarter of participants never met the conditions to sign a DPA, leading to their termination; and mean days in MHC, because of its congruence with number of MHC hearings. We also omitted the compliance ratio from the first multivariate analysis because of the missing information on a fourth of participants. The second multivariate analysis is conducted on the 303 participants with this information (see Table 4, Model 3 below).

Table 3 presents the results of the first multivariate analysis on the full sample ($N = 408$). In the first model with sociodemographic variables and criminal history, we see that four variables—age, race, number of prior arrests, and drug use at key arrest—are significantly related to graduation. Being older and White increase the odds of graduation, whereas number of prior arrests and use of illegal drugs decrease the odds of graduation. Model 2, adding the two court processing variables, shows number of MHC hearings to be positively associated with graduation whereas days to placement in MHC shows no effect. There is little change in the variables brought from Model 1. Finally in Model 3, adding participant behaviors during MHC, we see that all three variables (any failure to appear for MHC hearings, any arrest during MHC, and the positive drug test ratio) negatively affect the odds of graduation. Of variables brought from Model 2, race and drug use at key arrest maintain their significant effects; but number of prior arrests and number of MHC hearings lose significance when these participant behaviors during MHC are added. All models are significant and each model represents a significant improvement over the previous one. In fact, the participant behaviors during MHC added in Model 3 almost double the explained variance (from a Nagelkerke R^2 of .28 to .54).

The second multivariate analysis on the subsample of 303 participants with information on case manager meetings followed

Table 3
Logistic Regression Predicting MHC Graduation (N = 408)

	Model 1		Model 2		Model 3	
	B (SE)	Exp *b* (95% CI)	*B (SE)*	Exp *b* (95% CI)	*B (SE)*	Exp *b* (95% CI)
Age	0.02 (0.01)*	1.02 (1.00–1.04)	0.02 (0.01)	1.02 (1.00–1.04)	0.01 (0.01)	1.01 (0.98–1.04)
Female	0.01 (0.23)	1.01 (0.65–1.58)	0.03 (0.23)	1.03 (0.65–1.62)	−0.20 (0.27)	0.82 (0.48–1.41)
White	1.25 (0.46)**	3.50 (1.41–8.69)	1.22 (0.48)**	3.39 (1.33–8.61)	1.29 (0.63)*	3.62 (1.05–12.46)
Number of prior arrests (2 years)	−0.19 (0.09)*	0.82 (0.69–0.99)	−0.20 (0.09)*	0.82 (0.68–0.99)	−0.15 (0.10)	0.86 (0.71–1.05)
Key arrest drug offense	−0.36 (0.23)	0.70 (0.44–1.10)	−0.46 (0.24)	0.63 (0.40–1.01)	−0.32 (0.28)	0.73 (0.42–1.27)
Drug use at key arrest	−1.75 (0.24)***	0.17 (0.11–0.28)	−1.78 (0.24)***	0.17 (0.10–0.27)	−1.01 (0.29)***	0.36 (0.21–0.64)
Days key arrest to MHC			0.00 (0.00)	1.00 (1.00–1.00)	0.00 (0.00)	1.00 (1.00–1.00)
Number of MHC hearings			0.18 (0.05)***	1.19 (1.08–1.32)	0.07 (0.06)	1.08 (0.96–1.21)
Any FTA during MHC					−2.26 (0.57)*	0.10 (0.03–0.32)
Any arrest during MHC					−0.81 (0.36)*	0.45 (0.22–0.90)
Postive drug test ratio					−4.10 (0.73)***	0.02 (0.00–0.07)
Nagelkerke R^2	0.25		0.28		0.54	
−2 log likelihood x^2	471.23***		457.97***		347.56***	

Note. $N = 408$. MHC = mental health court; CI = confidence interval.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 4
Logistic Regression Predicting MHC Graduation (N = 303)

	Model 1		Model 2		Model 3	
	B (SE)	Exp *b* (95% CI)	*B (SE)*	Exp *b* (95% CI)	*B (SE)*	Exp *b* (95% CI)
Age	0.01 (0.01)	1.01 (0.99–1.04)	0.01 (0.01)	1.01 (0.99–1.04)	−0.01 (0.02)	0.99 (0.96–1.02)
Female	−0.21 (0.26)	0.81 (0.48–1.36)	−0.20 (0.27)	0.82 (0.48–1.39)	−0.55 (0.35)	0.58 (0.29–1.14)
White	1.42 (0.55)**	4.15 (1.42–12.14)	1.46 (0.57)*	4.29 (1.40–13.13)	2.24 (0.98)*	9.43 (1.38–64.53)
Number of prior arrests (2 years)	−0.29 (0.12)*	0.75 (0.59–0.95)	−0.32 (0.13)*	0.73 (0.57–0.93)	−0.21 (0.14)	0.81 (0.61–1.08)
Key arrest drug offense	−0.36 (0.26)	0.70 (0.41–1.17)	−0.48 (0.28)	0.62 (0.36–1.06)	−0.48 (0.35)	0.62 (0.31–1.23)
Drug use at key arrest	−1.66 (0.28)***	0.19 (0.11–0.33)	−1.72 (0.29)***	0.18 (0.10–0.31)	−0.44 (0.37)	0.64 (0.31–1.34)
Days key arrest to MHC			0.00 (0.00)	1.00 (1.00–1.00)	0.00 (0.00)	1.00 (1.00–1.00)
Number of MHC hearings			0.23 (0.06)***	1.25 (1.12–1.40)	0.05 (0.07)	1.05 (0.91–1.20)
Any FTA during MHC					−2.70 (0.69)***	0.07 (0.02–0.26)
Any arrest during MHC					−1.22 (0.43)***	0.30 (0.13–0.68)
Postive drug test ratio					−4.44 (0.82)***	0.01 (0.00–0.06)
Noncompliance ratio					−1.58 (0.63)*	0.21 (0.06–0.70)
Nagelkerke R^2	0.25		0.30		0.62	
−2 log likelihood x^2	355.71***		339.22***		229.47***	

Note. $N = 303$.
* $p < .05$. ** $p < .01$. *** $p < .001$.

the same stepwise progression but added the noncompliance ratio to Model 3 as an independent variable. In this analysis shown in Table 4, most variables in the first two models do not change much from their values in the prior analysis with the full sample (see Table 3, Models 1 and 2). Differences appear in Model 3 when the noncompliance ratio is added. Drug use at key arrest loses significance, whereas being White more than doubles its effect, increasing the odds of graduation to 9.43 times over that of non-Whites. As expected, the noncompliance ratio is negatively related to graduation in that more noncompliant check-ins are associated with reduced odds of graduation. The other three measures of participant behavior during MHC increase their negative impact on graduation in this final model. As in the prior analysis with the full sample, each model here increases the explained variance; and the bigger increase is in Model 3 with the addition of participant behaviors during MHC where the explained variance more than doubles (from .30 to .62).

Discussion

There are now more than 350 MHCs across the United States (Goodale, Callahan, & Steadman, 2013) and 14 more in Canada (Douglas Institute, 2013). Evidence is mounting that they are effective in achieving their main goal of reducing criminal recidivism, especially when participants complete their individual plans of treatment and services, and graduate. Yet we have little empirical evidence of what influences graduation and its opposite, negative termination. In the current article, we investigated sociodemographic factors and criminal history that participants brought into MHC, court processing, and participant behaviors during MHC. We found participant behaviors during MHC, measured by arrest, failure to appear for MHC hearings, positive drug tests, and noncompliance as recorded by case managers, negatively affected graduation and significantly increased explained variance in multivariate models when other relevant variables were controlled.

All three measures of recent criminal history that participants brought into MHC were significantly related to graduation in bivariate analyses, but their explanatory power faded thereafter. Key arrest drug charge did not reach significance in any of the multivariate models. Number of prior arrests and drug use at key arrest maintained their significance when sociodemographic and court processing variables were controlled; however, number of prior arrests lost significance in the final models when participant behaviors during MHC were added. Drug use at key arrest maintained significance but lost strength in the final model with the full sample and lost significance in the final model of the analysis of the subsample with case manager information on noncompliance. Measures capturing failure to change past behavior patterns and not following court mandates, thus, had a larger impact on graduation than what participants brought to court. This finding indicates that a significant proportion of participants overcame the risk factors of their past and changed their behavior from prior behavior patterns (multiple prior arrests and drug use) with the structure and supports of MHC. It is important for MHC screening because it suggests that mentally ill persons with high risk factors should not be denied admission to MHC, as many such persons are capable of responding with changed behavior patterns to a well-structured and resourced program.

This MHC did not terminate participants who slipped into old patterns of drug use and other offending early in their MHC tenure; rather it encouraged them to try to desist and continue with the new, law-abiding behaviors. The MHC team expected participants to have a difficult time in making required behavior changes. At later stages, and with higher levels of failure to make the changes, the MHC did terminate them. Persistent failure to make behavior changes and to cooperate with court mandates was most closely associated with termination. Enough high risk participants complied with the MHC program and changed to law-abiding behaviors so that participant behavior in MHC overrode past patterns of drug use and prior offending in the statistical models. The importance to successful MHC completion of participants changing their behavior to comply with court mandates was also found by Redlich and colleagues (2010, 2013). This finding of participant behavior during MHC overriding demographic and criminal his-

tory predictors should not be taken to mean that past risky behavior patterns are unimportant because both our study and that of Redlich and colleagues (2010) found that these earlier behavior patterns predict compliance during MHC. In other words, criminal history factors influence participant behavior during MHC but the MHC program counteracts those earlier influences to bring about changed behavior with a substantial proportion of participants to override their effects in predicting graduation.

In our data, the strongest of the four participant noncompliant behaviors impacting MHC outcome was the positive drug test ratio. This finding is consistent with previous studies of both criminal justice diversion programs and other interventions for persons with severe mental illness that have found substance abuse to be a major, if not the major, predictor of negative outcomes (Burns et al., 2012; Callahan et al., 2013; Dirks-Linhorst et al., 2011; Hartwell, 2004; Hiday & Wales, 2013; Hiday et al., 2013; Swanson et al., 2000). Yet we found that whereas the risk factor of drug abuse led to termination, it did not preclude graduation. Two-fifths of those with drug use at key arrest, almost half of those with required drug testing during MHC, and 37.1% of those with a positive drug test during MHC were able to graduate. Furthermore, graduates averaged 2.5 positive drug tests during their time in MHC, indicating that a sizable proportion of drug abusers managed to change their behavior and cease their drug abuse, at least during MHC. Again, our findings suggest that higher risk offenders (those with substance abuse) are viable candidates for MHC admission in that a MHC program with treatment, services, monitoring, and supports that address substance abuse as well as mental illness can assist them to new law-abiding behavior patterns.

Our observations and discussions with court officers in both this MHC and numerous others across the United States indicate that MHC teams and judges expect a certain amount of failure in meeting MHC mandates for behavioral change (Moore & Hiday, 2006; Ray, Dollar, & Thames, 2011). They are willing to give multiple second chances and work with participants to bring about needed changes; but they expect sincere cooperation with the team in trying to change. We found that graduates and noncompleters were similar in proportions with failed drug tests and with other noncompliance as reported by case managers during the first three weeks of MHC, after which the two groups diverged with graduates declining in the proportion not in line with court mandates and the proportion of noncompleters who were not complying increasing. This leaves open the question of whether graduation rates would be improved (and by how much) by lengthening the period of supervision, perhaps with intensified treatment and services, for those still noncompliant after three months (see Callahan et al., 2013).

One variable participants brought into MHC, race, did gain strength when participant behaviors were added to the final models, especially in the model using the reduced sample with case manager noncompliance reports (Table 4, Model 3). Stepwise regression adding the noncompliance last (not shown) indicated that it was the noncompliance ratio that caused the increase in the odds of graduation for Whites. Because there was no significant difference in the noncompliance ratio by race, it is likely that this increase is accounted for by racial differences in family support, education, and employment among this court's participants that we observed in the courtroom and in interviews (Wales et al., 2010). With the small proportion of Whites in the full sample and subsample (10.1% and 8.7%, respectively), the even smaller proportion of White noncompleters (1.7%, 1.6% respectively), and lacking measures of these variables, it is impossible to test statistically for an explanation.

Despite the much shorter duration of participants' time in this study's MHC in comparison with other MHCs (4–6 months vs. 12–18 months), the proportion of participants who graduated, three-fifths, is in the middle of graduation rates reported in both misdemeanor and felony mental health courts (31%–80%, see Dirks-Linhorst & Linhorst, 2012; Herinckx et al., 2005; Hiday & Ray, 2010; McNiel & Binder, 2007; Moore & Hiday, 2006; Redlich et al., 2010). It indicates that misdemeanor MHCs can achieve the same results of setting participants on a new law-abiding path with a shorter time period if there are adequate structures, treatment, services, and supports. Locating an optimal duration for MHC supervision, with a given set of community resources for treatment and services, requires a comparison of costs both to the judicial system and to the liberty interests of participants and of benefits to society and participants arising from increases in compliance.

Limitations

In considering the results presented in this study there are some limitations to keep in mind. Because this study is of only a single court, a MHC of much shorter duration, and with only misdemeanants having no pending violent felony charge and no recent violent felony conviction, one should be careful in generalizing to other MHCs. This court, however, had all the essentials of a MHC (Almquist & Dodd, 2009) and its graduation rate was in the middle of the graduation rate distribution of other MHCs. Second, the data used in this study were from administrative data sets not intended for research purposes; thus, they were missing measures of theoretically important variables and there were missing values on some included variables. Although all participants were provided case management and mental health treatment, and drug treatment for those who tested positive for drugs, we did not have measures of appropriateness of the mental health treatment and services received. Pretrial services personnel told us of the inadequacy of housing options, especially important to reducing criminal arrests among homeless persons (Fisher, Shinn, Shrout, & Tsemberis, 2008; Tabol, Drebing, & Rosenheck, 2010). We also did not have other measures likely to be important in compliance and MHC graduation such as homelessness itself, employment, education, and family support.

Although we had four court processing measures, the administrative data did not provide indicators of other processes that have been hypothesized to lead to successful outcomes, such as procedural justice (Canada & Watson, 2013; Poythress, Petrila, McGaha, & Boothroyd, 2002; Redlich & Han, 2013; Wales, Hiday, & Ray, 2010) and reintegrative shaming (Ray et al., 2011). Our observations of multiple sessions in this study's MHC indicated a high level of procedural justice compared to traditional criminal court; and participants reported high levels of perceived procedural justice (Wales et al., 2010). However, we have yet to examine the effect of participant perception of procedural justice on MHC graduation among interviewed participants.

Finally, we have not evaluated whether this study's MHC employed legal procedures and legal actors consistent with therapeutic jurisprudence. Much of the early literature describing MHCs drew from therapeutic jurisprudence in explaining their rationale, and some MHCs were explicitly founded on therapeutic jurisprudence principles (Petrila et al., 2000; Schneider et al., 2007; Watson et al., 2001; Winick & Wexler, 2003). More recently Redlich and Han (2013) found measures of procedural justice, along with MHC knowledge and perceived voluntariness—both of which they interpret as indicators of therapeutic jurisprudence—to positively affect graduation, but indirectly through participant behavior during MHC. We do not make claims of therapeutic jurisprudence in our study's MHC because neither the court officers in this MHC nor those of all but one of the 18 other MHCs across the United States that our team has observed articulated therapeutic jurisprudence principles to justify court processes or procedures. Instead, they emphasized practical and humanitarian concerns and reasoned that punishing persons with a mental illness for offenses that arise from the mental illness has not reduced recidivism and has led to inhumane and costly incarceration. However, with its procedural justice and voluntariness (Wales et al., 2010), an observer would likely categorize the program and procedures of this study's MHC as embodying therapeutic jurisprudence principles and would expect therapeutic outcomes for its graduates. One could argue that MHC graduation itself is therapeutic because it represents having received a "full dose" of the MHC program with its monitoring, treatment, services, and supports (McNiel & Binder, 2007; Moore & Hiday, 2006) and because it represents being formally welcomed back into the community of law-abiding citizens (Ray et al., 2010). Moreover, because graduation is associated with reduced criminal recidivism (see Burns et al., 2012; Dirks-Linhorst & Linhorst, 2012; Hiday & Ray, 2010; Hiday et al., 2013; McNiel & Binder, 2007) and because not reoffending indicates better functioning, it leads to therapeutic outcomes.

Conclusion

Despite evidence from this and other studies that graduation is an important predictor of reduced recidivism after participation in MHC, only five studies heretofore have investigated the factors influencing successful completion of MHC among participants and their results have not yielded a clear, consistent picture. With multiple indicators, the present article examined what participants brought to MHC, their processing in MHC, and their behaviors during MHC. We found that participant behaviors during MHC (persistent positive tests for illegal drugs, arrest, failure to appear for MHC hearings, and persistent noncompliance with court mandates) had the strongest impact on graduation, increasing the odds of failure to graduate and reducing, if not eliminating, the direct effects on completion of the criminal history factors participants brought into court.

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