Hennepin County
Department of Community Corrections and Rehabilitation
Office of Policy, Planning and Evaluation

Institutional Violations at the Adult Corrections Facility

Racial differences in rates and reasons

May 2017

Introduction

This study uses a number of statistical tests to examine potential disproportionality in institutional violations among residents of the Adult Corrections Facility based on resident race.

The Adult Corrections Facility (ACF) is operated by the Department of Community Corrections and Rehabilitation. The facility provides short-term custody and programming for adults for a maximum stay of 365 days. Those under the jurisdiction of the facility (referred to in this study as "residents") serve their time either in the institution or in the community on electronic home monitoring (EHM). Those under ACF jurisdiction can move between being on home monitoring and being a resident in the institution during the course of a commitment.

Like every correctional facility, the ACF has rules that must be followed by residents. These rules promote the safety of residents and the efficient operation of the institution. This report was prepared to explore the violation process as part of department's commitment to use data to drive continuous improvement and the Hennepin County goal of exploring racial disparity at every criminal justice decision point.

If one racial group is arrested or convicted more often than another, correctional populations will reflect that disproportionality in the makeup of their clientele. This disproportionality between correctional population and the population at large cannot be changed by correctional programs. But those programs must not show *disparate* outcomes: they must treat the people they serve the same way, regardless of any qualities of the person unrelated to the violation itself.

This study found racial disproportionality and disparity that should be explored by department leadership and staff.

Sources and methods

ACF staff manually tracked the number and types of violations cited from January 1, 2015 through June 30, 2016.[1] To fully determine the impact of race

[1] Only the number and type of violations were tracked. There was no information available on the outcome of the violation citations, or identification of staff who made the citations.

and other factors on violations, a sample was drawn which included all persons admitted during the period who served their entire sentences within the time frame. This amounted to 6,852 individual bookings. [2]

Most information about residents was obtained from queries of the facility's case management system (OMS). Additional information about residents was obtained from the Adult Field Service Court Services Tracking System (CSTS) [3] and the DOCCR's Minnesota Criminal Event Database (MNCED).

The following analyses are based on bookings, not persons. A booking represents the commitment of one individual into the ACF for a set period on one or more cases. Individuals could have more than one stay at the facility during the period.

Several statistical procedures, including descriptive statistics, Chi Square analyses, Logistic Binomial Regression, and Cox Regression were used in the course of the study.

Issuing a violation

The decision of whether to issue a violation, and what rules to cite therein, is made by the correctional officer (CO). Some rules are very broad, some specific, and violations can have greater or lesser consequences, depending upon the severity. The process of citing residents for violations is a complex one, guided by training but unique in each instance.

When a citation is issued for a violation, it must be approved by the Senior CO and Corrections Supervisor on duty. The resident has the option of either a stipulated plea/informal hearing or requesting a formal hearing. Sanctions are generally lower for informal hearings/stipulated pleas. There are some ACF rules where informal hearings are not permitted; these are known as aggravated violations.

When formal hearings take place, they are conducted with multiple parties involved in a Hearing Board process. This may result in substantiating, adding, or dismissing a violation based on secondary analysis or review of additional evidence.

When multiple points of discretion are involved, the opportunity for implicit and explicit bias interference exists. Multiple staff involvement in the process of issuing a violation could be a strategy to mitigate this interference. Unfortunately, the data available for this study is not detailed enough to provide a full analysis at each stage of the violation process. This study explores only the approved violation decision point, not the initiation of the process nor the outcome.

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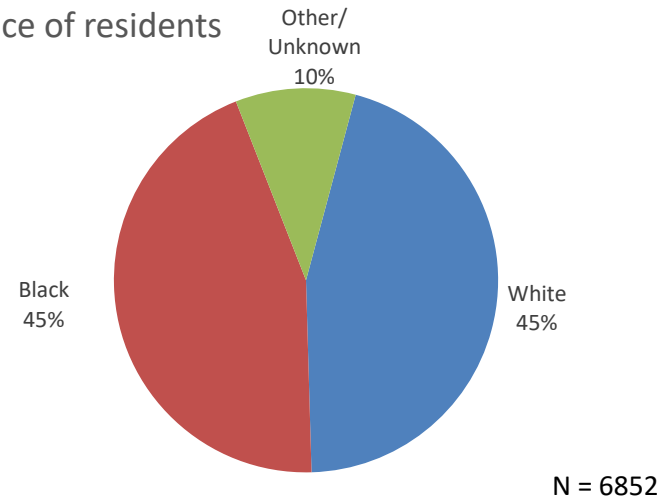
[2] 146 bookings designated as "Pre Booking" admissions were removed from the analysis.
[3] A key element from AFS was the individual answers for items on the AFS prescreener. The prescreener is a tool used by both AFS and ACF staff to estimate risk of re-offense. The prescreener is not necessarily administered at the same time as a resident is booked. However, the prescreener closest to the booking date was chosen for each resident. The median number of days between the commitment date and prescreener administration was three, and 70% were completed within 21 days of the commitment date.

Racial makeup of the ACF population

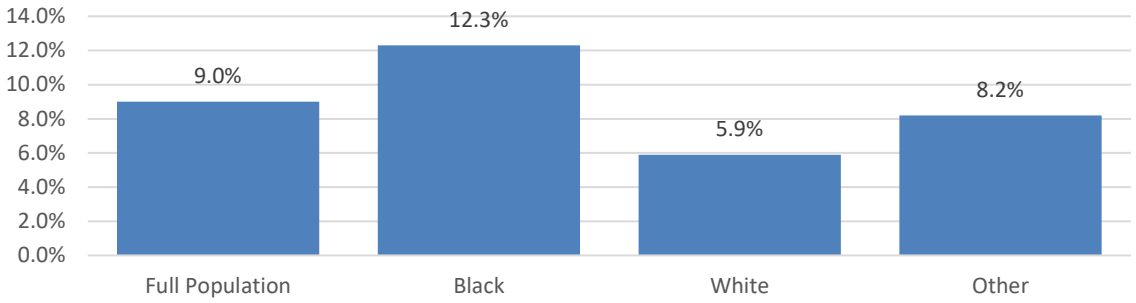
There were roughly equal numbers of black and white residents, with a small number of other races, as shown in Figure 1.

Fig 1: Race of residents



Of the 6852 residents in the sample, 616 (9%) had one or more violations during their incarceration. Conversely 91% did not have a violation during the study period. An initial analysis indicated that members of different racial groups have a different likelihood of being the subject of one or more approved violation reports, as shown in Figure 2. This difference was statistically significant.[4]

Fig. 2: Percent of bookings with one or more violations by race



Disproportionality is common in the criminal justice system, and exploring those findings for disparity is critical. This initial finding of disproportionality began a series of statistical analyses outlined throughout this report.

To explore disparity, this study focuses on comparing black residents (N = 3049) with white residents (N = 3110). As Figure 2 above shows, the rate of violations for other races was about midway between that of blacks and whites. These other races include Native American, Hispanic, Asian, and other groups. Each of these groups is individually so small as to make analysis very difficult. However, each has distinct characteristics that make it inappropriate to combine them into a single "other non-white" group.

[4] Chi^2 p = .000

Correlation

One of the problems faced in any examination of potential bias in the criminal justice system is the correlation between so many potential predictor variables and race. Many things known to be predictive of crime – things like unemployment, drug use, and poor education – are also known to be highly correlated with race. Table 1 shows the results of cross tabulations of different qualities and violations by race.

Table 1: Cross tabulations by race and individual characteristics

	Percent of group with any violations		**Significance**[5]
	White	**Black**	
Sex			
Male	6.4%	12.6%	p = .000
Female	4.6%	10.4%	p = .000
Marital Status (selected statuses)			
Married	3.9%	11.2%	p = .001
Single	7.3%	13.3%	p = .000
Divorced	4.4%	10.3%	p = .053
Offense Severity (From OMS)			
Felony	12.1%	17.9%	p=.000
Gross Misdemeanor	3.1%	7.4%	p=.000
Misdemeanor	2.9%	7.7%	p=.000
ACF Classification			
Minimum	13.4%	18.2%	p=.015
Medium	20.6%	28.2%	p=.004
Same address for 12 months prior to pre-screener			
Yes	5.8%	14.6%	p=.000
No	10.3%	17.6%	p=.000
Employed 60% of the 12 months prior to pre-screener			
Yes	4.0%	12.0%	p=.000
No	12.6%	18.2%	p=.000
Conviction for one or more assaultive offenses within five years			
Yes	13.4%	19.4%	p=.007
No	6.3%	14.2%	p=.000
Prior felony conviction in criminal history			
Yes	10.9%	15.6%	p=.007
No	4.8%	9.9%	p=.000

[5] Significance in statistical terms refers to how likely it is that the difference between two numbers is just random or that there is actually a real difference between them. The p value is actually the probability that the result seen is random. If p = .01, it means that a random sample would show this result only one in a hundred times of there were in reality no relation between the variables.

In each case, the white group has a significantly lower rate of violations than the black residents. Even when holding for the presence or absence of individual qualities that could make a person more likely to be high risk for criminal behavior, race and violation appear to be highly correlated.

Correlation is not causation. Just because something is highly correlated with something else does not mean that one causes the other. For many years, the winner of the Super Bowl was highly correlated with the performance of the stock market. If a team from the NFC won, the market would be up for the year. If the winner was from the AFC, the market was likely to be down. From 1967 to 2015, this indicator was correct 82% of the time.[6] Despite this impressive record, it is unlikely that these statistics are actually related to each other.

Still, this initial finding of correlation points to the need for a more in depth examination of racial disparities in violations at the ACF.

The regression equation

The fact that there are several factors that could potentially be involved in violations requires statistical methods that can determine the individual effect of each one when combined with the others.

To determine the impact of any one variable, it's necessary to hold the other correlated variables constant. For example, snow storms are caused by a combination of cold, moisture, wind, and barometric pressure. In this case, to determine the impact of temperature, we would have to hold the value of the other three variables constant while looking at changes in the temperature. How much more or less likely is it that a storm takes place when the temperature is 15 instead of 10, given the same moisture in the air, wind, and barometric pressure?

The statistical model for isolating the effect of individual variables is known as regression analysis. This study used binary logistic regression to explore what was most predictive of having a violation at the ACF. This is because the ultimate outcome we are looking at is binary – either someone has a violation or s/he does not.

Variables from all of sources available were considered in developing the regression equation. Table 2 shows some of those that were considered, along with their source.

[6] Power, William, *Super Bowl Stock Predictor has a Streak Going*, Wall Street Journal, January 15, 2016, Retrieved March 31, 2017

Table 2: Partial list of potential predictor variables considered

Variable	Definition	Type	Source
Black	Is the resident black?	Dichotomous	OMS
Female	Is the resident female?	Dichotomous	OMS
Work Release admit	Current admission is coded for "Work Release if Eligible"	Dichotomous	OMS
Other admit	Current admission is for some other type (i.e., weekender)	Dichotomous	OMS
Felony	Current booking is for a felony offense	Dichotomous	OMS
Felony history	Any felonies in prior criminal history	Dichotomous	MNCED
Address Indicator	One or more changes of address in the last 12 months	Dichotomous	Pre-screener[7]
Employment Indicator	Employed at least 60% of the time in the last twelve months	Dichotomous	Pre-screener
Drug/Alcohol Indicator	Use of drugs and/or alcohol interferes with functioning	Dichotomous	Pre-screener
Assault Indicator	Conviction for assaultive offense within the last five years	Dichotomous	Pre-screener
Days	Length of stay for the booking	Continuous	OMS
Days^{2} [8]	Square of length of stay	Continuous	
Age	Resident age in years	Continuous	OMS
Age^{2}	Square of age	Continuous	
Days in house	Days in the booking spent in an "in-house" status (i.e., Straight Time or in-house work release)	Continuous	OMS
Days out of house	Days in the booking spent in an "out-of-house" status (i.e., Straight Time EHM or EHM work release)	Continuous	OMS
Sum of criminal history	Total number of cases in criminal history	Continuous	MNCED

Two types of variables were looked at when developing the regression equation: dichotomous and continuous. *Dichotomous* variables indicate the presence or absence of a particular condition or state. For example, "Female" is a dichotomous variable – it is equal to 1 if the resident in question is female, and 0 if the resident is male.

Continuous variables, on the other hand, can theoretically have an infinite number of values. The variable for length of stay runs from 0 to 375 in this data set. The mix of both types of variables in this study means that the results of a regression procedure cannot simply be ranked highest to lowest in determining what variable has the most influence on a violation. That caution must be observed when interpreting the results.

Multiple iterations of the regression procedure produced a model that identified several statistically significant independent variables (numbers that were

[7] Use of the variables from the pre-screener removed about one-third of the cases from the analysis. We also estimated a regression model that did not use these variables and used the entire sample. The results of this regression were very similar.

[8] The squares of length of stay and resident age were included as a sensitivity test. This assumes that the relationship between these variables and the dependent variable isn't linear.

predictive of violation). The final model has all but one variable significant at the .008 level. This means that the results would be seen randomly only 8 in 1000 times.

The variables that were found to be predictive of being the subject of one or more approved violation reports are shown in table 3. [9]

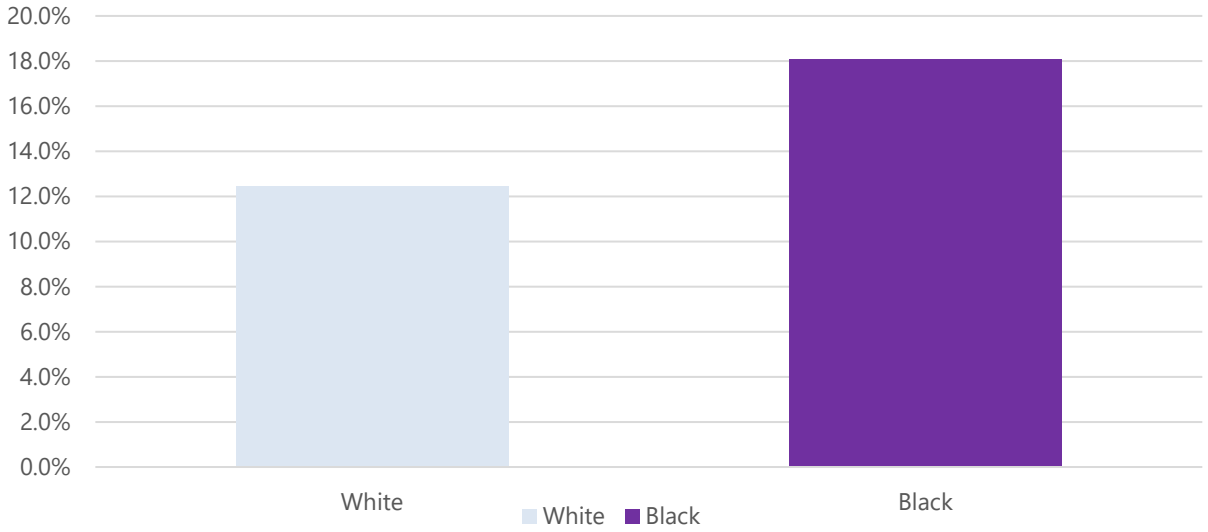
Table 3: Binary logistic regression results[10]

Variable	Relation to violation	Type	Exp (B)	Significance
Black	Positive	Dichotomous	1.452	.002
Any felonies in criminal history	Positive	Dichotomous	1.443	.001
Employment Indicator (Employed 60% or more in the last year)	Negative	Dichotomous	.691	.003
Age in years	Negative	Continuous	.976	.000
Days spent in "in-house" status	Positive	Continuous	1.015	.001
Days spend in "out of house" status	Negative	Continuous	.985	.001
Constant			0.129	

The column headed "Exp (B)" is an indication if the amount of change in the dependent variable for each unit change in the independent (predictor) variable. A figure of one or more indicates a positive relationship, and less than one denotes a negative relationship. It's important to remember the type of variables when trying to gauge their relative strength. They size of the coefficient is not necessarily a reflection of the size of the variables influence on the likelihood of violation because of the mix of dichotomous and continuous variables in the equation. Based on the results above, it appears that the number of days spent in house, race, and having a felony in the resident's criminal history are the strongest predictors.

[9] The Nagelkerke R^2 for the equation is .260.
[10] For this analysis, residents classified as "weekenders" were omitted. Only 10 of the residents served any time on weekender status.

Fig. 3: "Average Resident" chances of one or more violations



The result of this equation is that, all other things being equal, black residents were nearly half again as likely (46%) to receive one or more violations as were white residents, as shown in Figure 3.[11]

The equation finds both the number of days spent in house and the days spent on EHM (out of house) significant, but with different effects. As the number of days spent in house increases, so does the likelihood of a violation. Days spent on EHM reduces the likelihood of violation. While most people serve the bulk of their time on either one status or the other, it is possible to have significant stays in the institution and on Electronic Home Monitoring (EHM) during the same booking. It is possible that the residents that meet criteria or are sentenced to EHM possess protective factors that make violation less likely. This would align with criminal justice research suggesting non-violent criminal history, employment, and full-time student status are protective factors. Further analysis can better differentiate the role days-in-house plays in the violation process as compared to race.

As interesting as what was found to be predictive in the regression procedure is what was *not* found to be predictive. The facts of having had a conviction for assaultive behavior, or significant drug or alcohol issues were all dropped from the equation for being non-significant.

Of particular importance is the fact that the sex of the resident was not predictive. The two sections are completely separate within the institution. Thus this finding implies that the disparity of violations by race is not confined just to one or the other section: it is seen throughout the entire institution.

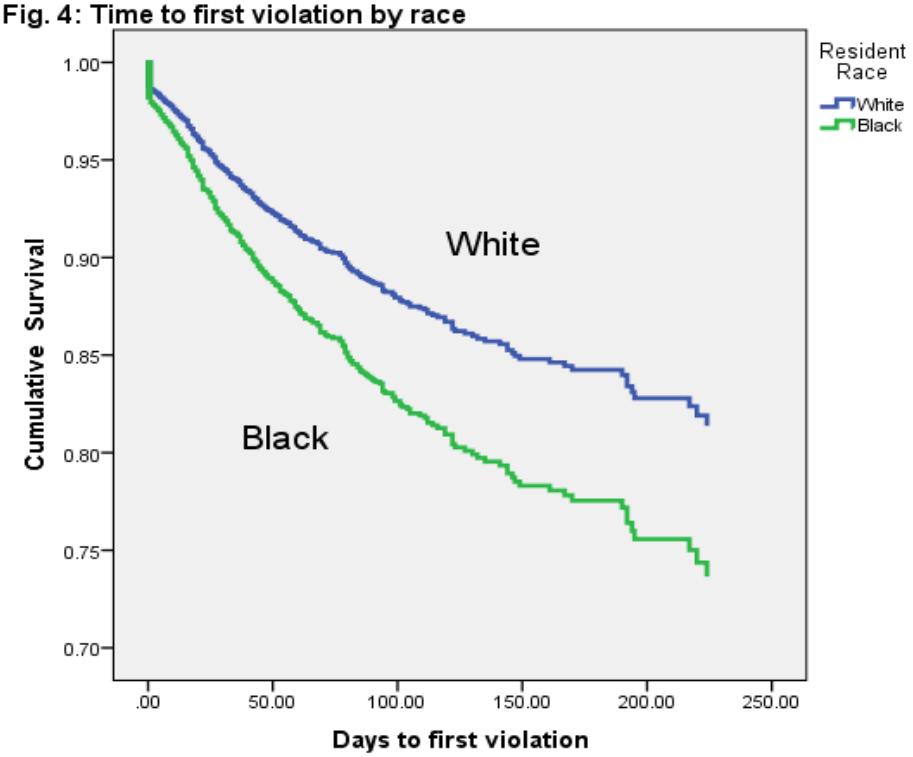
[11] This way of describing the results of binomial logistic regression is known as the "Change in the average observation method" and is described in Studenmund, A.H., *Using Economics: A Practical Guide, 5th edition,* p. 458. Because this equation uses a logarithmic scale, it is the ratio of the two results that is most important, and not necessarily the absolute values.

Cox Regression: time to violation

As a check on the initial regression analysis, a survival analysis was also conducted. The survival analysis examines whether or not there is a difference in how quickly members of each group receiving violations get them.

The comparative survival rates are shown in Figure 4. The vertical axis shows the percentage of the group that has not had a violation. The horizontal axis shows the number of days since the commitment began. The steeper slope of the line for black residents compared to the white line indicates that black residents were likely to receive their first violation more quickly than white residents.

Fig. 4: Time to first violation by race



As with the issue of whether or not there was a violation, there are many factors which have an impact on the time until a violation takes place. In order to account for the impact of the different variables, another type of regression equation was developed.

Cox Regression was used to determine the importance of individual variables. Like the binomial logistic regression discussed above, it is a means of isolating the individual impact of different variables on the outcome. In this case, the equation predicts the impact of those variables on the time until a first violation takes place.

A Cox regression equation was estimated using the same variables found in the final binomial regression noted above. Each of those independent variables proved to be significant again in the Cox regression, each having a p value of less than .05. This result implies that race has a significant impact on the amount of time until a violation takes place, regardless of any other factors that may be present.

Types of violation

One factor in the differential in violations between black and white residents might be the nature of the violations themselves. There are many different rules, and violations can be differ a great deal in their nature. Some are very objective: for example, failure to report to the ACF. Others are more subjective: refusal to comply with orders, or disturbing the peaceful functioning of the ACF.

As a part of this analysis the rules of the ACF were coded as being either mostly objective, mostly subjective, or somewhere in between (coded as "other"). Those coded as "subjective" are those where the same behavior or the same incident would be met with a different response, depending on the resident and officer involved. For example, Rule #7, which prohibits "swearing, insolent, threatening or abusive language (or gestures) towards any other person" was classified as subjective: different officers might classify a particular action as "insolent" differently. Table 4 shows how the rules were coded[12], and how many instances of violation there were for each of the rules.

Table 4: Type, incidence and severity of ACF rule violations

Rule #	*Description*	*Instances*	*% of all instances*	*Classification*	*Severity*
	Subjective				
1	Refuse to comply with orders/interfere with staff	271	18.8%	Subjective	High
7	Swearing, insolent, threatening or abusive language or gestures	142	9.9%	Subjective	High
2	Non-compliance to ACF rules	131	9.1%	Subjective	Moderate
6	Lying or false information to staff	62	4.3%	Subjective	High
31	Disturbing the peaceful function of the ACF	61	4.2%	Subjective	Moderate
29	Interference with lock-up or counts	34	2.4%	Subjective	Moderate
15	Threatening the peaceful functioning of ACF	16	1.1%	Subjective	Highest
18	Recklessness, carelessness, horseplay or any other act that could jeopardize health and safety	16	1.1%	Subjective	High
23	Refuse to keep self or cell/room clean	12	0.8%	Subjective	Low
21	Inciting, planning or participating in a riot or major disturbance[13]	6	0.4%	Subjective	Highest

[12] Coding of violations as either subjective, objective, or other was reviewed and approved by ACF Management.

[13] This rule is classified as subjective because it is exceptionally broad in scope. It could range anywhere from actual rioting to simple insolence, depending on the officer, the resident, and the situation.

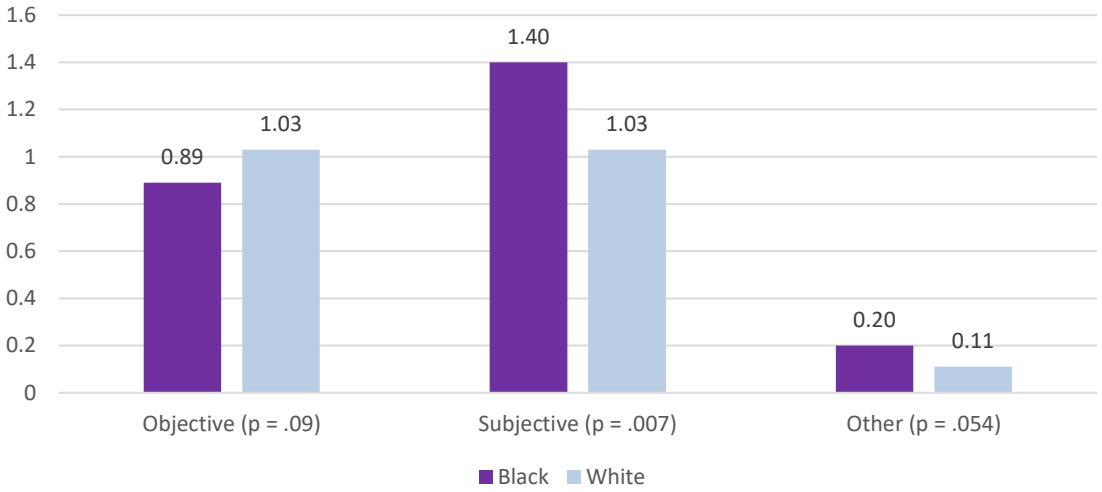
Rule #	*Description*	*Instances*	*% of all instances*	*Classification*	*Severity*
	Objective				
16	Failure to report or return to the ACF	106	7.4%	Objective	High
13	Report to facility intoxicated	74	5.1%	Objective	Moderate
10	Possessing or consuming intoxicants or controlled substances	60	4.2%	Objective	Highest
19	Assault or attack with or without a weapon	37	2.6%	Objective	Highest
14	Possess, pass or receive contraband	60	4.2%	Objective	Highest
9	Theft within the institution	35	2.4%	Objective	Moderate
11	Hoarding or saving[14]	34	2.4%	Objective	Moderate
39	Work Release: Unauthorized absence from work, school, home or unauthorized stops	34	2.4%	Objective	High
5	Resisting placement	26	1.8%	Objective	Highest (Physical)/ Moderate (Verbal)
35	Work Release: Fail to notify staff of changes to employment or school	21	1.5%	Objective	Moderate
25	Fail to remain law abiding	18	1.2%	Objective	High
37	Work Release: Fail to turn in daily time sheets, earnings statements or documentation of presence at approved appointment	16	1.1%	Objective	Low
28	Unauthorized use of, tampering with, or damaging Hennepin County property	12	0.8%	Objective	High
12	Refuse/fail to submit to an alcohol or drug test	11	0.8%	Objective	High
34	Work Release: Fail to report job site locations	8	0.6%	Objective	Low
3	Refuse to carry out or quitting an institutional assignments	4	0.3%	Objective	Moderate
17	Escape/attempted escape	4	0.3%	Objective	Highest
20	Make or possess weapons	3	0.2%	Objective	Highest
24	Abuse correspondence privileges[15]	3	0.2%	Objective	Moderate
36	Work Release: Termination from work/school/or programming for cause	3	0.2%	Objective	High
32	Intentional sabotage, neglect of job duties, and/or inappropriate work behavior while on a work program[16]	2	0.1%	Objective	High
27	Smoking	1	0.1%	Objective	Low

[14] This rule is fairly uniform in application, and only cited after a random cell search. Hoarding refers to fairly egregious instances: possession of ten blankets, for example.
[15] Infractions of this rule as it is currently applied relate to use of phones in the facility.
[16] Despite its broad wording, this rule is applied very specifically. It applies to very specific, intentional acts: One example is that of a resident on the work program who "put ten widgets in a box instead of the required 12, so s/he could make the quota more easily. The fact that this rule was only cited in two incidents during the study period could be evidence of its specificity.

Rule #	*Description*	*Instances*	*% of all instances*	*Classification*	*Severity*
	Other				
4	Out of bounds, loitering, or in unauthorized area without permission[17]	76	5.3%	Other	Low
26	Harassment	18	1.2%	Other	Highest
33	Refuse or fail to pay reparations[18]	17	1.2%	Other	Moderate
22	Dressing improperly	4	0.3%	Other	Low
38	Work Release: Use unauthorized transportation to or from work, school or other programming etc.	3	0.2%	Other	Moderate

A pattern emerged when looking at the residents who had violations. Black residents were significantly more likely to have a greater number of subjective rule violations and "other" types of rule violations than whites. That disparity is reversed for more objective rules. These differences are shown in Figure 5.

Fig. 5: Average number of rule violations by rule type for residents with one or more violations



These results indicate that there is a difference in the types of behavior for which black and white residents receive discipline. While both white and black residents are disciplined at a higher rate for subjective rather than objective

[17] In December 2016, the ACF automated the violation process in the OMS information management system. At that time, some language, particularly subjective language, was omitted from rules. This rule is an example, it now reads "Out of bounds". During the time covered in this study, all rules read as indicated in this report.

[18] "Reparations" refers to all amounts due "including restitution, fees, child support, etc. or ACF imposed fees (i.e. Room & Board, placement fees, ascending UA fees, Rule 25 fee, etc." Depending on the fees involved and the resident, failure to pay may result in the establishment or restructuring of a payment plan. In other cases, (for example, if the resident is unemployed and payment is impossible at the moment) the rule may not be invoked at all.

violations, the statistics show that black residents are much more likely to have more subjective violations than white residents. White residents appear more likely to have more objective violations, while black residents may be more likely to have "Other" types, although these statistics are less statistically significant.

Other potential issues

That racial differences in violations exist is indisputable. The reason for them, however, is not necessarily clear.

It is possible that race is not the only causal factor for violations at the ACF. A preliminary analysis of the data used for this study indicates that socio-economic status (SES) – which is highly correlated with race and criminal justice involvement in the literature – may also play a role.

When the initial regression equation was run separately for those with 60% or more employment in the 12 months before assessment, and for those without, it showed a distinct difference. While black residents were still more likely to have violations in both groups, the significance of race increased in the employed group and reduced to the point of non-significance among those not employed steadily. This finding differs from criminal justice theory that would suggest employment is protective factor.

It is possible that the data available for this study lacks detail to appropriately define a SES variable and thus sub-grouping for analysis. An "employed" group can vary widely – employment can range from a $500 an hour attorney to a $15 an hour janitor. However, unemployed groups are more homogeneous. This could help interpret the above finding that race is predictive of violations for those employed and not for those under-employed. There is much research in Minnesota that highlights disproportionality of income by race. Future studies will need to explore the link between SES, race and violations more closely.

Discussion

These analyses of rate, timing, and type of violation indicate that

- there is a statistically significant difference in rates of approved violation reports between black and white residents,
- black residents who are cited for violations receive their first violation more quickly than white residents, and
- the types of violations for which black residents are cited are more likely to be subjective in nature than those for white residents.

Racial bias of any kind is unacceptable. However, addressing it successfully requires identifying it more completely. Bias can be either explicit or implicit. In cases of explicit bias, the actor is aware that he or she has a bias for or against a certain type of person and acts upon it. If someone has implicit bias, he or she may feel that their actions are completely neutral, yet they are in reality influenced by unconscious beliefs. Mitigation effort for each type of bias will be different.

At the beginning of 2017, a new violations module was added to OMS. The ACF now automatically tracks more information on violations than were available for this study. Data on the specifics of violations, the staff who report and approve violations, and hearing outcomes are beginning to be available. This information should be examined, analyzed and reported regularly to ACF and Department management. Further study, more qualitative in nature, should be used to identify causes and potential solutions for the inequities that are seen in the differential in violation rates and reasons.

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