Juvenile Justice System
Disproportionate
Minority
Contact

Racial and Gender Disproportionality in Missouri's Juvenile Justice System: A 2010 Update

A Missouri Juvenile Justice Advisory Group, Department of Public Safety supported project conducted in close collaboration with Missouri Juvenile Justice Association and communities across Missouri.

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I. Introduction

A. Background

Recent media headlines have highlighted the changing demographic landscape in America. 2010 marks the first year when more minority children were born in America than Caucasian children (Yen, 2010). Missouri is no stranger to diversity as 36 counties have a minority youth population of at least 10 percent (Missouri Census Data Center, 2010). Counties with significant minority representation can be found throughout all regions of Missouri. As demographics change over time, state and local governments are tasked with adjusting their services to better serve their residents' needs.

The changing demographic trends highlight the importance of one particular area of government service, the juvenile justice system. For the last 30 years, communities around the country have worked to reduce racial disparities in how youth are treated in the juvenile justice system. Even after 30 years of effort, minority youth in the United States are arrested at a rate that is nearly twice that of their Caucasian counterparts (Puzzanchera & Adams, 2008).

A primary mechanism to bring attention to racial disparities in the juvenile justice system on a nationwide basis is the Disproportionate Minority Contact (DMC) initiative. The overall goal of the initiative is to ensure equal and fair treatment of every youth in the system regardless of race or ethnicity. Millions of dollars have been spent by the federal and state government, as well as local communities to ensure the equitable treatment of all youth who come into contact with the justice system. The efforts have had mixed results, and many communities nationwide are still struggling with disproportionality. In an effort to better understand the challenges and opportunities that communities in Missouri

encounter regarding this issue, this study was undertaken to update findings of a similar 2004 study undertaken by the National Council on Crime and Delinquency.

The research questions are:

1. To what extent do racial/ethnic and gender disparities exist within Missouri's juvenile justice system?

2. If disparities do exist for minorities or females at any juvenile office or court contact decision point, what other referral or youth characteristics are associated with race/ethnicity or gender that might be contributing to disparities?

3. How does 2010 compare with 2004? Has any progress been made to reduce disparities?

B. Review of Literature

In 1988, the Coalition for Juvenile Justice published *A Delicate Balance,* which outlined the gross overrepresentation of minority youth in the juvenile detention population. This was the original spark that has since fueled an interest in disproportionate minority contact from policy, practice, and research perspectives. Researchers have found evidence of racial disproportionality at almost every stage in the juvenile justice system (Pope & Feyerherm, 1990; Pope, Lovell & Hsia, 2001). After acknowledging that a disparity exists, the question then shifts to why does it exist? To answer this question, many different theories have been proposed, and three main ones have come to dominate the literature. The first theory is 'differential behavior', or the belief that minority youth are committing crime more often than their Caucasian counterparts (Pope & Snyder, 2003).

The second theory is 'differential treatment', which implies those involved with the processing of youth are biased in their decision making (Johnson & Secret, 1990). And

finally, 'policy discrimination' argues that certain laws and policies related to patrolling, sentencing, and confinement affect minority youth more than Caucasian youth (Wilson, 2009). These theories need not be mutually exclusive, and it is easy to imagine a scenario where all three issues are present.

1. Racial and Gender Disparities in Juvenile Court Processing: National Studies

To get at the heart of the disparities issue, researchers have examined the different steps in juvenile justice system case processing, beginning with referrals. The point of referral or custody is the first point at which juveniles come into contact with the justice system and, thus, is the gateway into the system. Research has shown the existence of differentially more contact between police and minority youth (Bishop & Frazier, 1996; Horowitz & Pottieger, 1991). This increased contact becomes magnified when looking at decision points further in the system. A cumulative effect has been shown by some authors (Pope & Feyerherm, 1990) which makes disparities larger for adjudication and disposition. Some social scientists attest that each decision made by the authority at a given point in case processing signals information about the juvenile and his/her case (Matarazzo, Carrington, & Hiscott, 2001). It should be noted that other researchers have failed to find an additive effect, and some have shown that pre-adjudication decisions have little impact on disposition outcomes (Tittle & Curran, 1988; Frazier & Bishop, 1985).

When youth are referred to the court, they may be presented for detention, and the detention decision should be based on their risk to the community or failure to appear for their adjudication hearing. Many researchers have shown that minority youth are detained much more often than their Caucasian counterparts (Wu, Cernovich, & Dunn, 1997;

Words, Bynum, & Corely, 1994; Hinton-Hoytt et al. 2001; Johnson and Secret, 1997; Bortner & Reed, 1977). Conversely, other researchers have shown that, once other variables are considered, such as prior offending history, race does not play a role in detention decisions (Pawlak, 1977; Bishop & Frazier, 1996). Regardless, overrepresentation of minorities in detention remains a major concern, because evidence is mounting that pre-adjudication detention has a significant impact on subsequent court outcomes; namely, it is associated with more severe sanctions (Rodriguez, 2010).

After a youth is referred to the system, a determination is made either to process a referral formally or informally. Formal processing involves a court hearing in front of a judge. Informal cases typically result in a conference with parents or with an administrative sanction warning letter, probation, or community service. A youth may also be offered voluntary services such as counseling, anger management classes, etc. Leiber and Stairs (1999) were able to show that African American youth were more likely to be formally processed for cases involving drug charges. Because of the more serious nature of a formally processed case, this is another critical step for examining disproportionality. Some researchers have shown that even when other key factors are considered, such as offense seriousness, African American youth are formally processed more often than Caucasian youth and receive harsher penalties later in the system (Johnson & Secret, 1990).

The adjudication decision has been studied with varying results. Frazier et al. (1992) found that, in areas with a higher proportion of Caucasians, African American youth receive harsher punishments for similar offenses. Other researchers have shown that Caucasian youth are more likely to be adjudicated and to receive more severe sanctions (Wu et al., 1997; Frazier & Cochran, 1986). The mechanisms affecting the decision to

adjudicate become less clear when one considers the indirect effects often associated with minorities (socioeconomic status, single parent household, discipline issues with school), which, when present in the life of a child, affect case outcomes (Wordes et al., 1994; Nicholson-Crotty et al., 2009).

The most severe sanction is incarceration. Many studies have shown that African American youth are incarcerated at rates much higher than their Caucasian counterparts (Joseph, 1995; Krisberg, DeComo, Rudenstine, & del Rosario, 1995; National Council on Crime and Delinquency, 2007). In addition they tend to be incarcerated for longer periods. Studies have also shown that race is a significant factor in juvenile incarceration, even when other factors are considered (Leiber, 2003).

The research concerning gender disparities in court processing is sparser than that centered on race. Most of the research on gender has focused on females as an understudied group with a growing presence in the juvenile justice system. Researchers have focused on the questions of: what leads girls to offend, how do they differ from male offenders, and how should treatment be modified to meet their needs? However, several researchers have shown some major differences between the movement of males and females through the juvenile justice system. Although females are more likely than males to be informally processed (Bishop & Frazier, 1996), females are more likely to be detained for less serious offenses pre-adjudication (Berger & Hoffman, 1988). This trend reverses further into court processing; females who are adjudicated are less likely to be placed in out of home placements (Espinosa, Belshaw, & Osho, 2008).

As much of this literature suggests, the causes and mechanisms behind racial and gender disproportionality are complicated. In 2002, the U.S. Department of Justice, Office

of Juvenile Justice and Prevention, commissioned a study to look at all of the studies conducted on DMC during the time period of 1989-2001. They reviewed a total of 34 studies and reported the following:

> "Taken together, the research findings support the existence of disparities and potential biases in juvenile justice processing. However, the causes and mechanisms of these disparities are complex. Important contributing factors may include inherent system bias, effects of local policies and practices, and social conditions (such as inequality, family situation or underemployment) that may place youth at risk." (Pope, Lovell, & Hsia, 2002, p.5)

The findings of this study underscore the importance of exploring a variety of sources when trying to address disparities issues within a state at the local level. The next section of this paper examines previous DMC studies in Missouri.

2. Racial and Gender Disparities in Juvenile Court Processing: Missouri Studies

Evidence of disproportionality at various court contact points was found in previous Missouri studies. The Missouri Juvenile Justice Association issued a report in 2003 detailing the presence of DMC in secure detention for many Missouri counties. The Missouri Office of State Courts Administrator, in collaboration with the National Council on Crime and Delinquency, conducted a more detailed study of court processing in select circuits across the state (2004). The multivariate analysis found that African American youth were more likely to be detained in rural and urban locations, less likely to have a referral accepted, and more likely to be formally processed in the included circuits. To address the convergence of evidence regarding disparities in detention, Missouri became involved in the Annie E. Casey Foundation Juvenile Detention Alternative Initiative (JDAI). As of January 1, 2012, all circuits are actively working with the initiative to reduce the use of detention. A detention assessment tool has been developed and validated. While

annual evaluation results show that overall detention populations have decreased in the participating circuits, overrepresentation of minority youth in detention persists.

A statewide DMC project was undertaken in 2006 using data on court contact points as well as school discipline and school climate data. In addition, interviews were conducted with community stakeholders, and focus groups were held with youth. The 22 Missouri counties with a significant minority population (ten percent or more in 2004) were included in the study. The study found that disproportionality exists at different points in the system depending on the county and the reasons for disparities varied by county as well (Dannerbeck, 2006). More specifically, the study found that: 18 of the counties showed disparities in referrals, 7 for detention, and 3 for cases accepted for formal court processing. School discipline data indicated consistently high rates of racial disparities in discipline practices. In addition, African American and Hispanic youth report lower levels of favorable school climate indicators. The focus groups revealed that minority youth and their families do not trust law enforcement or the courts to treat them fairly. Stakeholders (court staff, law enforcement, parents, school personnel, and community leaders) generally feel that parents do not do enough to control their children and that schools prefer to let the justice system handle behavioral problems.

The most significant previous study on gender disparities in case processing was the 2004 NCCD (National Center on Crime and Delinquency) report referenced earlier. The only significant gender finding from that study was that males were less likely to have a referral accepted for investigation. The circuits participating in the Juvenile Detention Alternative Initiative project supported by the Annie E. Casey Foundation conducted a sub-study of detained females. The analysis indicated that females were often detained for

status offenses with no associated public safety threat. Females tended to lack a suitable guardian, and detention was the only option available. In some situations, females were also detained for longer periods than males. By studying patterns in their circuits, court staff developed a heightened awareness of how gender disparities can occur in the detention decision. No other court contact point has been scrutinized for gender disparities, but data analysis reveals no areas of concern.

With the release of these studies and the JDAI project, have patterns of disparities changed in Missouri? This study is structured very similarly to the 2004 NCCD study. In particular, the same statewide comparisons are made, and the same approach to modeling each decision point is used. Unlike the previous study, this one uses data for all 45 circuits, an improvement over the previous study.

II. Study Design

A. Methods

Juvenile divisions in all of Missouri's 45 judicial circuits were included in the study. Data were obtained using the Missouri Judicial Information System (JIS). Data were for the most recent year that is available, 2010.

The data reflect all status and juvenile law referrals disposed by the end of 2010 (December 31, 2010). Multiple referrals for youth were intentionally included, because recidivism is an indication of a failure in providing services for those youth. Only cases with complete records of information on case disposition, race, gender, and drug use at time of offense as well as risk and needs assessments are included in the study. The seven Juvenile Detention Alternative Initiative (JDAI) sites as of January 1, 2010 (2nd, 5th, 16th, 17th, 21st, 22nd, and 31st Circuits) are distinguished from the rest of the circuits and included

as a variable. Preliminary analysis indicates no significant differences in the proportional distribution of cases with and without complete records with one notable exception. Some of the major metropolitan areas had significant discrepancies in the number of referrals reported and the number with complete records. The missing cases may affect results, but, with 23,204 included cases, the study group size is adequate to draw conclusions for the state and it a significant improvement compared to the sample size of the 2004 study.

First, the study compares the proportional distribution of racial and gender groups at key decision points. This analysis will be referred to as the descriptive analysis. Second, a chi square analysis was conducted to identify significant differences between groups based on criminogenic risks and clinical needs. Next, logistic regression modeling of key court decision points singles out the effects of individual variables, including race and gender. This analysis will be referred to as the multivariate analysis. Finally, the results of the 2010 data analysis are compared to the 2004 study upon which this study is based.

B. Summary Statistics

While it is recognized that Hispanic is an ethnicity and that people of Hispanic origin can come from several races, the current Judicial Information System does not allow for separate identification of ethnicity. Due to this limitation, Hispanic origin is treated as a separate race for the preliminary analysis. In the multivariate modeling, because the cases are so few for Hispanics and other smaller racial/ethnic groups, they are combined with African Americans into one minority group.

In 2010, 47,095 status and juvenile law referrals were disposed in Missouri's juvenile courts. As discussed above, the number of referrals for this study was reduced to those with complete records of information on case disposition, race, gender, and drug use

at time of offense as well as risk and needs assessments. Cases that had ages younger than 6 and older than 17 were removed. The result is 23,204 cases. Figure 1 shows the final outcome for these cases. The majority of cases (72 percent) were processed informally. Eight percent of the referrals were rejected with an additional two percent being adjudicated but found not true. Eighteen percent of the referrals were adjudicated.

Figure 1

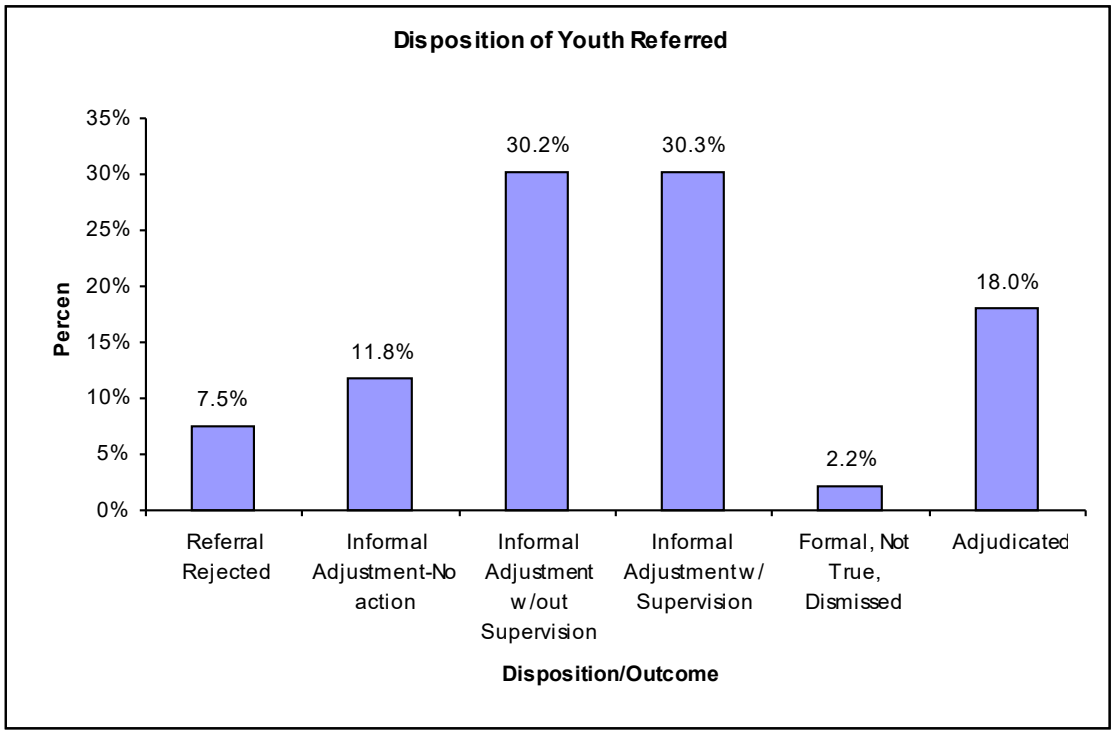


Table 1 shows the disposition breakdown by race. The 'Other' category includes Asian and Native American. African Americans had the largest proportion of referrals rejected with 12 percent compared to eight percent for 'Other' and six percent among Caucasians and Hispanics. For informally disposed cases, the most notable difference is in the proportion of African American youth who do not receive supervision (18 percent) compared to 28 percent or greater for the other groups. Compared to the other groups,

African Americans had a higher proportion, five percent, whose cases were formally processed and then dismissed. They also were the group with the highest proportion adjudicated (26 percent).

Table 1

Referral Disposition by Race/Ethnicity, 2010

	Caucasian		African American		Hispanic		Other*		Total	
Disposition	**Count**	**Percent**	**Count**	**Percent**	**Count**	**Percent**	**Count**	**Percent**	**Count**	**Percent**
Referral Rejected	1,086	6.2%	620	12.2%	28	6.3%	11	7.9%	1,745	7.5%
Informal No Action	2,114	12.0%	561	11.1%	45	10.1%	13	9.4%	2,733	11.8%
Informal Without Supervision	5,923	33.8%	905	17.8%	137	30.6%	39	28.1%	7,004	30.2%
Informal With Supervision	5,404	30.8%	1,435	28.3%	139	31.1%	44	31.7%	7,022	30.3%
Formal, Not True/Dismissed	240	1.4%	257	5.1%	14	3.1%	3	2.2%	514	2.2%
Adjudicated	2,777	15.8%	1,296	25.5%	84	18.8%	29	20.9%	4,186	18.0%
Total	**17,544**	**75.6%**	**5,074**	**21.9%**	**447**	**1.9%**	**139**	**0.6%**	**23,204**	**100.0%**

*Other = Native American and Asian

The racial breakdown (not shown) of referrals for all of Missouri's 45 Circuits. Circuits varied in their breakdown from almost 100 percent Caucasian (30th Circuit) to 92 percent African American (22nd Circuit). Caucasian youth represent 75.6 percent of the referrals. African American youth represent 21.9 percent of the referrals. Hispanic youth represent 1.9 percent of the referrals and 'Other' youth represent 0.6 percent of the referrals. The state level breakdown for gender (not shown) indicates that 67 percent of referrals are males. The age comparison (not shown) indicates a range from six to seventeen years old (the cut off values). The largest proportion of referrals was for 16 year olds (27 percent).

Table 2 presents the distribution of charge types by race/ethnicity. African American and 'Other' youth had the highest proportions of felony referrals. The four groups were fairly evenly

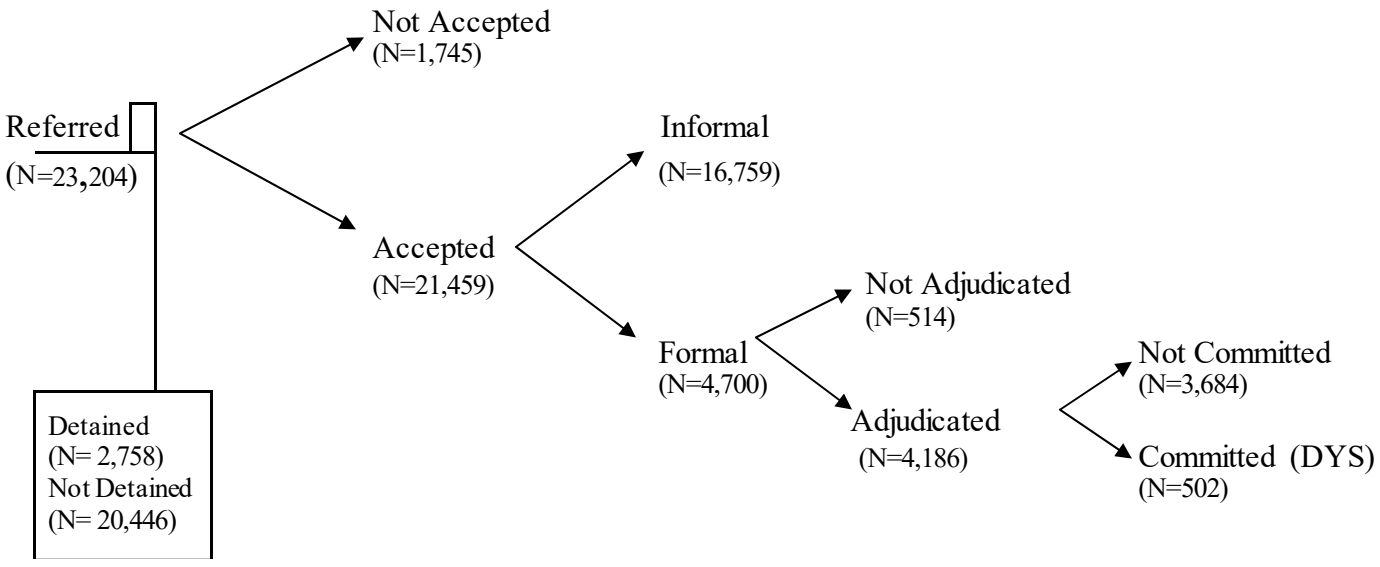
distributed across misdemeanors, ordinance, and incidences. African Americans had the lowest proportion of status charges.

Table 2
Sample Characteristics by Race/Ethnicity of Referred Youth, 2010

	Caucasian		African American		Hispanic		Other		Total	
Charge Type	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Felony	1,831	10.4%	805	15.9%	56	12.5%	21	15.1%	**2,713**	**11.7%**
Misdemeanor	7,971	45.4%	2,524	49.7%	224	50.1%	58	41.7%	**10,777**	**46.4%**
Ordinance	290	1.7%	90	1.8%	7	1.6%	3	2.2%	**390**	**1.7%**
Incidence	236	1.3%	26	0.5%	6	1.3%	1	0.7%	**269**	**1.2%**
Status Offences	7,216	41.1%	1,629	32.1%	154	34.5%	56	40.3%	**9,055**	**39.0%**
Total	**17,544**	**100%**	**5,074**	**100%**	**447**	**100%**	**139**	**100%**	**23,204**	**100%**

Figure 2 presents the distribution of referrals across the key decision points. Detention is outside the flow of court processing. Table 3 shows the number and proportional distribution of case processing decisions by racial grouping and gender. Caucasians had the largest number of

Figure 2
2010 Missouri Juvenile Referrals



referrals. African Americans had the greatest proportion of cases where the youth was detained and where the youth was formally processed. African Americans had the lowest proportion accepted

Table 3
Referral Dispositions by Race/Ethnicity and Gender, 2010

	Referred(N)	Detained[1]	Accepted[2]	Formal[3]	Adjudicated[4]	Commit[5]
Race/Ethnicity						
Caucasian	17,544	10.2%	93.8%	18.3%	92.0%	11.3%
African American	5,074	17.4%	87.8%	34.9%	83.5%	13.7%
Hispanic	447	15.2%	93.7%	23.4%	85.7%	7.1%
Other	139	13.7%	92.1%	25.0%	90.6%	13.8%
Gender						
Male	15,532	13.3%	91.7%	24.3%	88.8%	14.1%
Female	7,672	9.0%	94.2%	17.3%	89.7%	6.3%
Total	23,204	11.9%	92.5%	21.9%	89.1%	12.0%

1. Detained is a subset of referrals.
2. Accepted is a subset of referrals.
3. Formal is a subset of accepted cases.
4. Adjudicated is a subset of formal cases.
5. Commit is a subset of cases that are adjudicated.

(87.8%) and adjudicated (83.5%) referrals. Caucasians had the highest proportion. African American youth and youth in the 'Other' category had the highest proportion of commitments. Males had a higher percentage of referrals where the youth was detained, formally processed, and committed to DYS.

III. Racial and Gender Comparisons at Key Decision Points: Descriptive Analysis

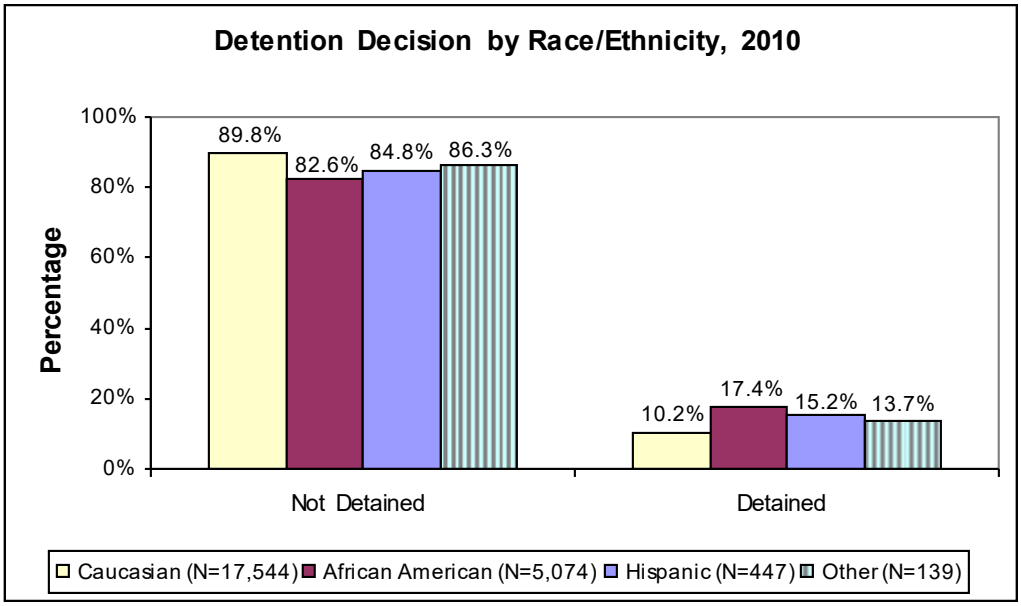
A. Intake Decisions

As a youth first enters the juvenile justice system, two main decisions are made. The first decision is whether the youth should be detained and the second is whether the referral will be accepted or rejected.

1. Detention

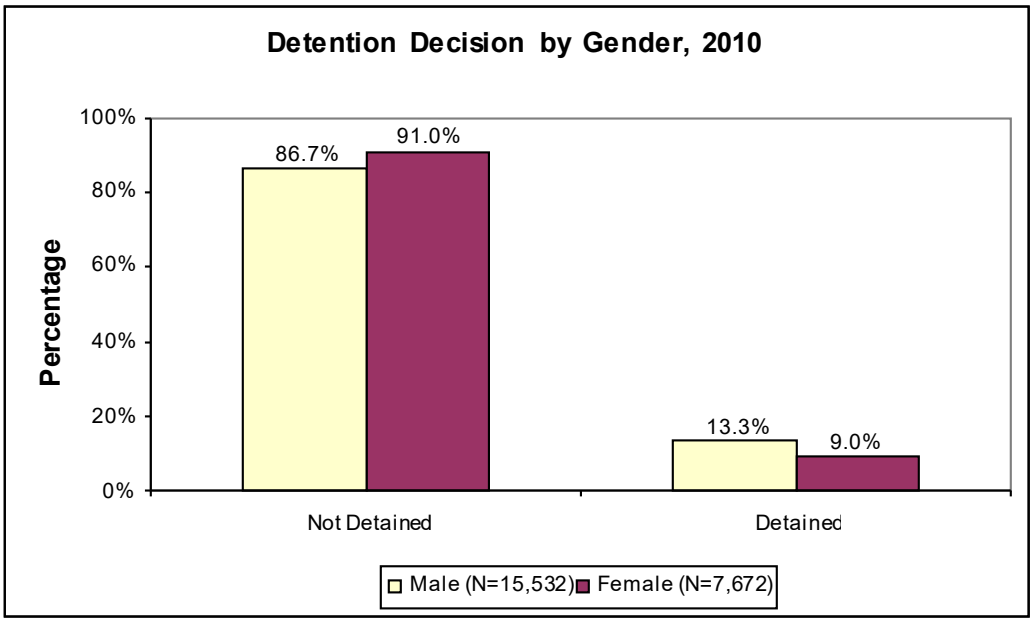
The racial breakdown for the detention decisions is shown in Figure 3. In 2010, among the referrals included in the study, in 12 percent of cases referred youth were held in detention. Detention decisions varied from 10 percent for Caucasian youth to 17 percent for

Figure 3



African American youth. Looking at detention decisions by gender, a higher proportion of males than females were detained (Figure 4).

Figure 4



2. Referral Acceptance

The second decision point is the acceptance (legally sufficient to proceed) or rejection (not true or insufficient) of the referral. The acceptance rate for all referrals was 93 percent. Acceptance rates varied from around 93 percent for Caucasian, Hispanic, and 'Other' youth to 88 percent for African Americans (See Figure 5). Gender differences were minimal, with 92 percent of male and 94 percent of female referrals being accepted (See Figure 6).

Figure 5

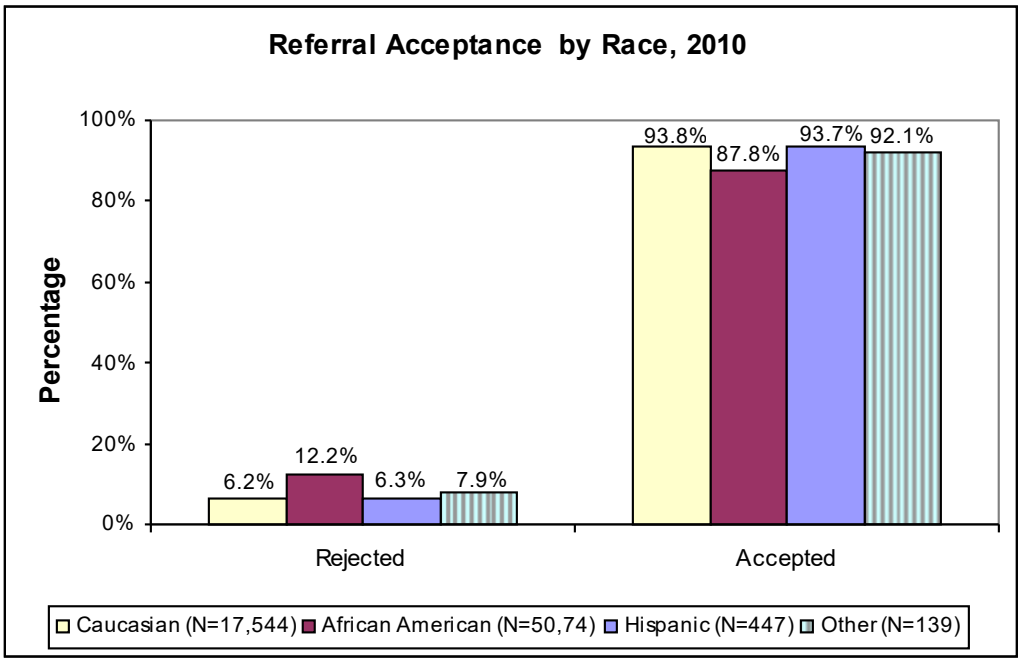
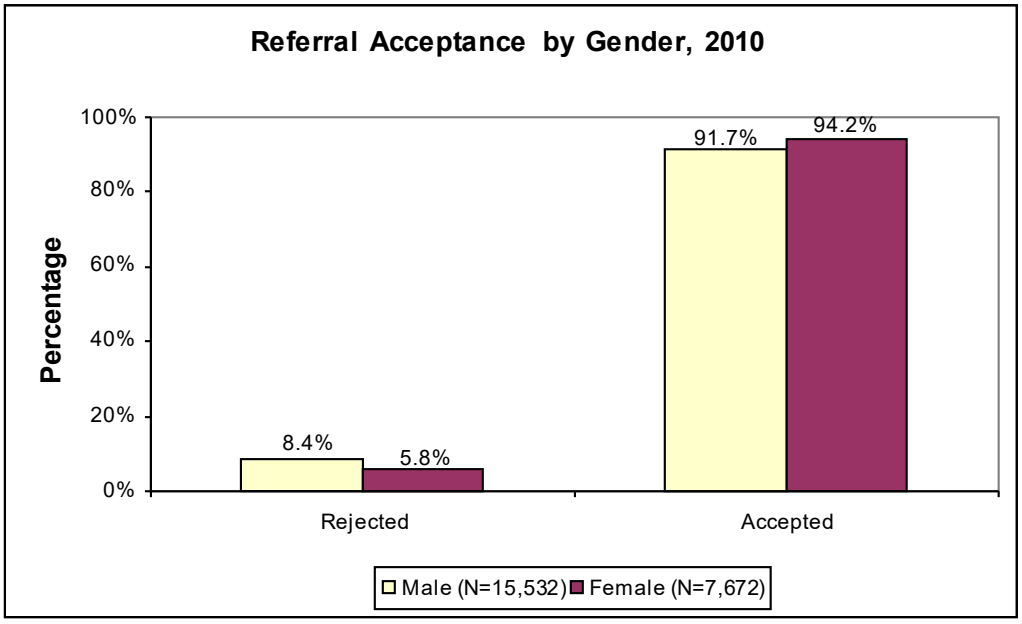


Figure 6



B. Case Processing Decisions

If a referral is accepted, it can be either informally or formally handled. Informal cases are handled at the juvenile office instead of court and can be resolved with or without supervision and services. Formal processing includes filing a petition, which means a judge will hear the case. The allegations can be dismissed, found true, or found not true. When the allegation is found true, the youth is adjudicated and can receive a variety of sanctions ranging from probation to out of home placement, including secure care.

1. Informal vs. Formal Processing

Referring to Figure 7, the decision to formally process a referral varied among racial groups. African American youth (35 percent) were much more likely to be formally processed than referrals in the other three groups. Looking at Figure 8, male referrals were formally processed 24 percent of the time and females 17 percent of the time.

Figure 7

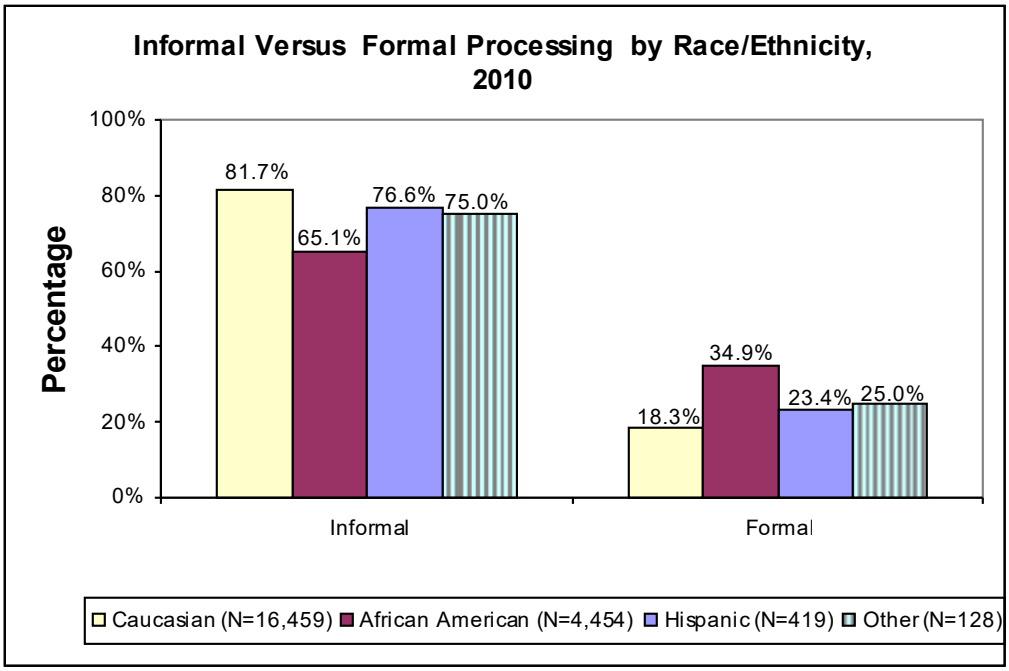
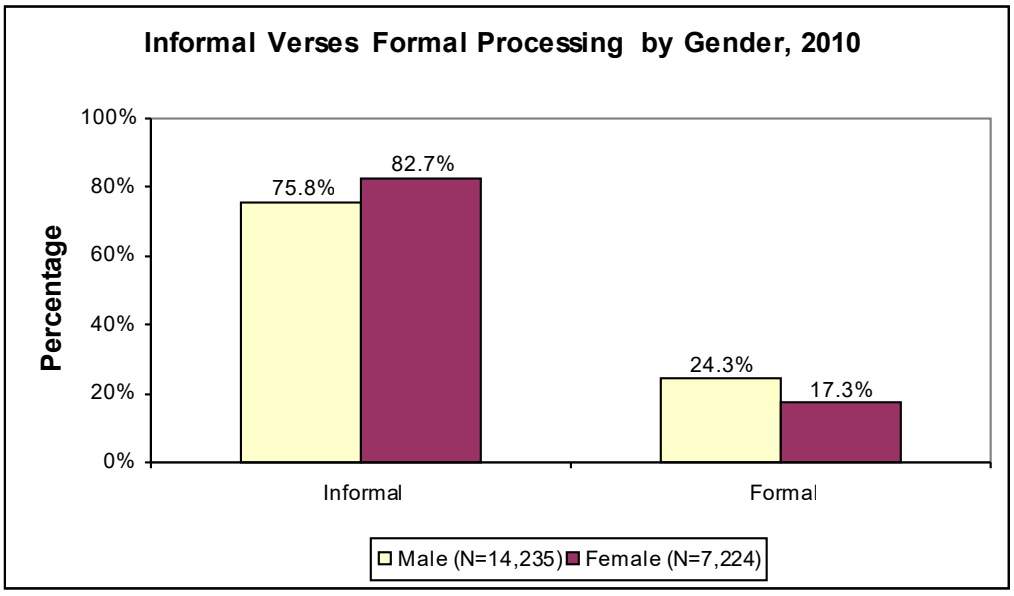


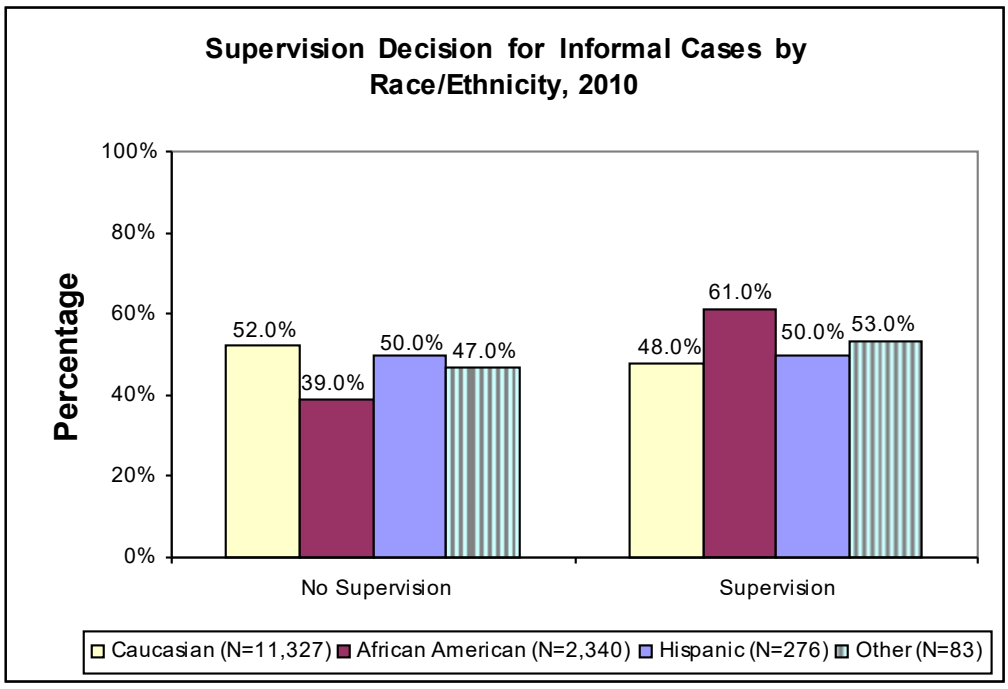
Figure 8



2. Supervision of Informal Cases

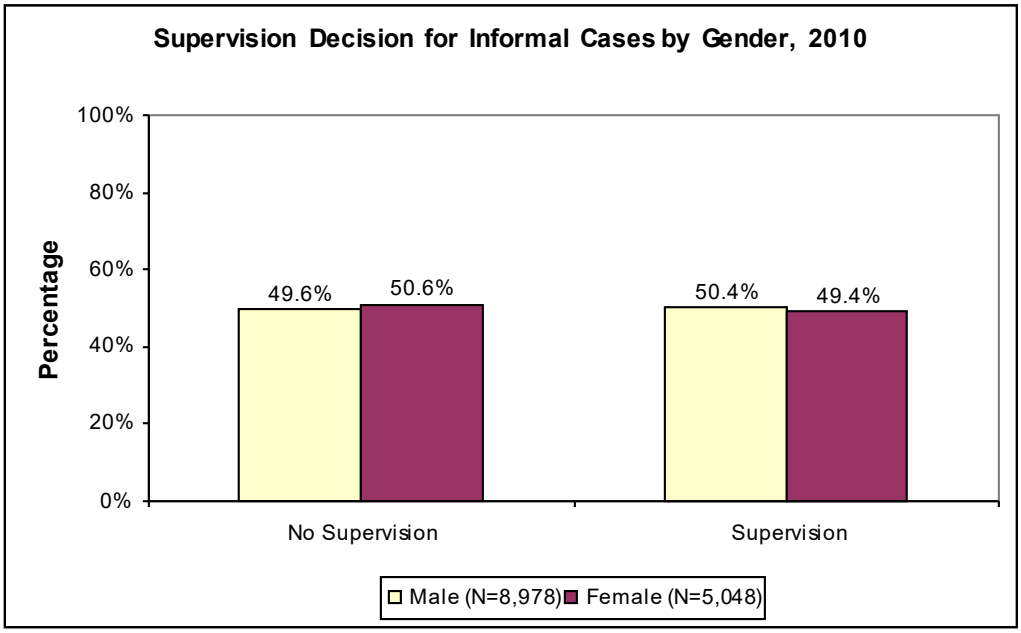
When a referral is handled informally, the youth may or may not be assigned supervision. A third option is for no action to be taken on a case beyond a general warning. Referrals with this latter disposition were excluded from the comparison. Figure 9 shows

Figure 9



that African American youth were the most likely to receive informal supervision and Caucasian youth were least likely. Males and females were about equally likely to receive supervision on informal cases (Figure 10).

Figure 10



3. Allegations Found True

Of the total referrals formally processed, 89 percent were found true. African American youth had the smallest proportion of referrals with the allegations found true (Figure 11). Figure 12 shows the rates for males and females were essentially the same.

Figure 11

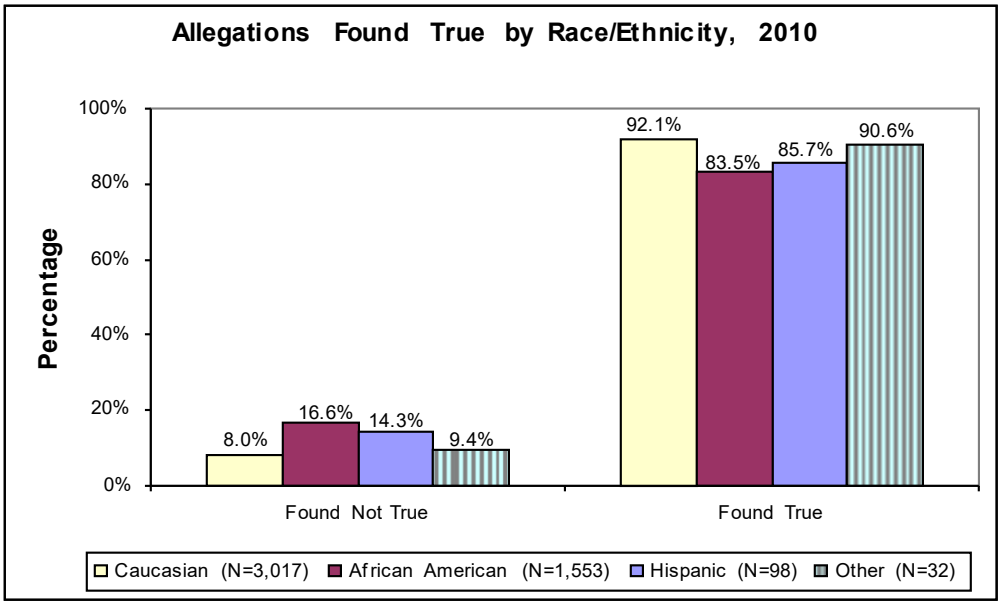
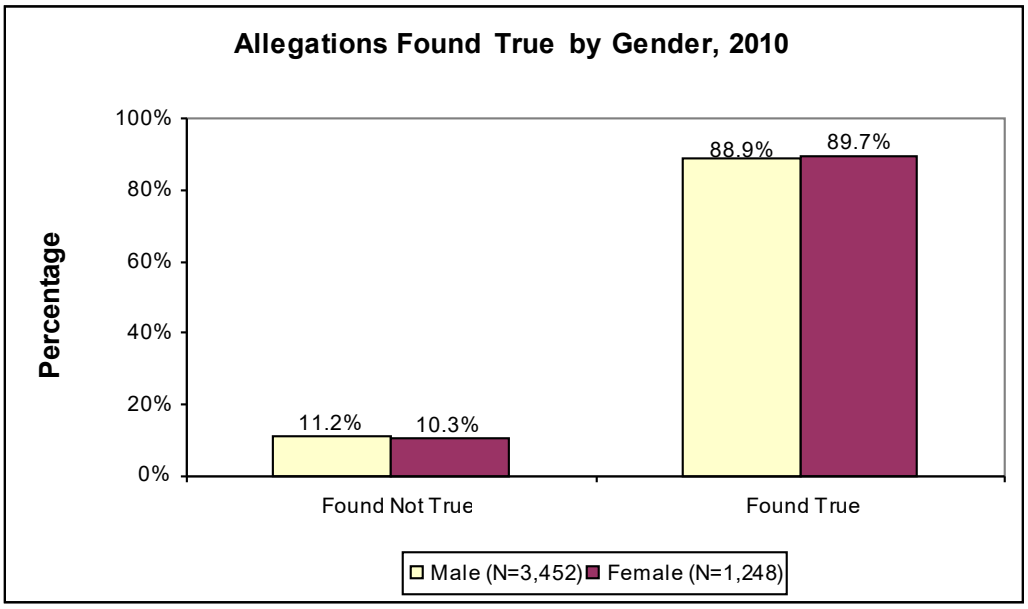


Figure 12



4. Committed to Division of Youth Services

When allegations are found true and the petition is sustained, the judge has the option to commit a youth to Missouri's Division of Youth Services (DYS) where some youth are placed in treatment facilities for periods typically ranging from four months to several years. The total number of referrals included in the study with a commitment to

DYS was 502, or about 12 percent of those cases with allegations found true. African Americans and youth in the 'Other' category had the highest proportions committed to DYS (Figure 13). Figure 14 shows that females were less likely than males to be sent to DYS.

Figure 13

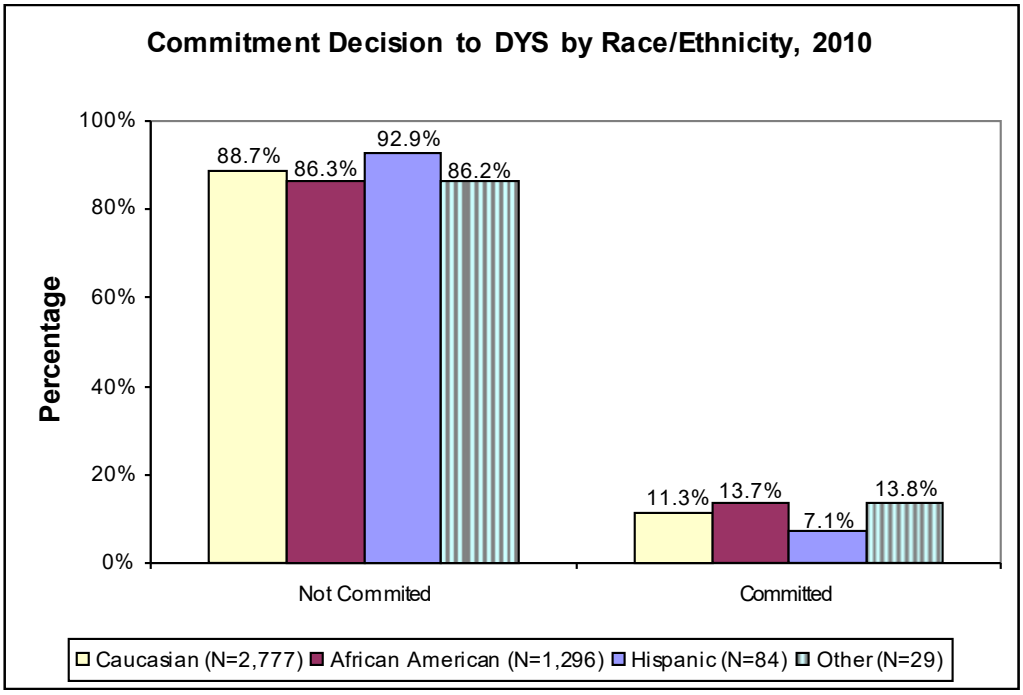
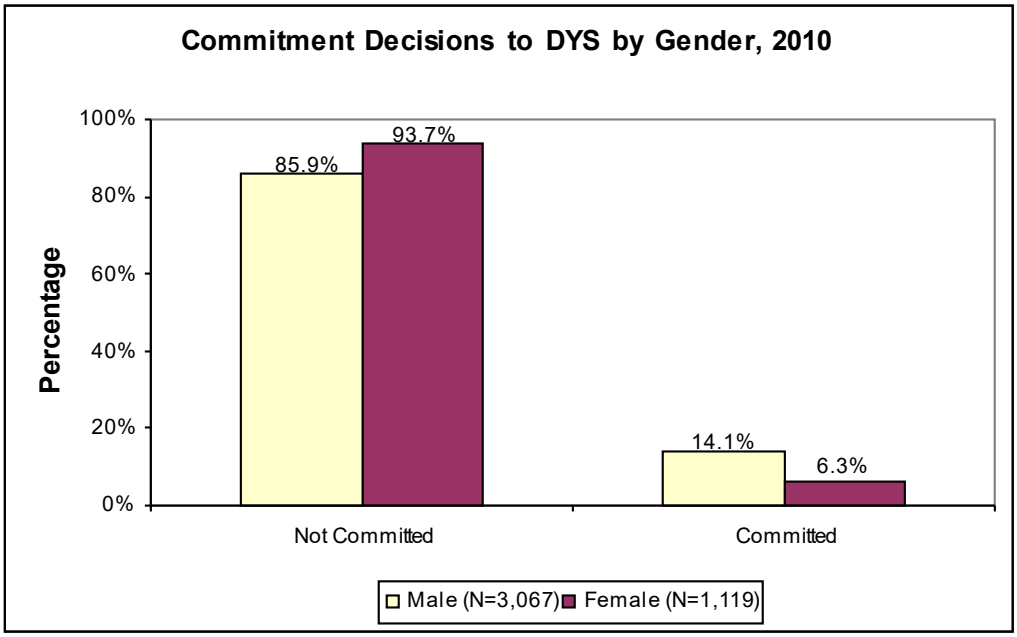


Figure 14



IV. Racial and Gender Comparisons of Significant Factors Associated with Criminogenic Risks and Clinical Needs

This section expands on the 2004 report. The analysis was added to provide more insight into patterns of difference between race and gender in terms of risks and needs characteristics studied in this report. Chi square analysis was conducted to identify significant differences between groups on risk and need characteristics, offense type, and drug use at the time of the offense. The factors are presented from the perspective of the greatest risk or need for a category (for instance, poor attitude rather than positive attitude). Only the most significant differences, at a probability level of less than 0.001, are reported. In other words, we are 99.9% confident that this difference is not due to chance alone.

Caucasian youth referrals are compared to referrals for minority youth. Hispanics and other racial/ethnic categories were combined with African Americans, because the numbers of referrals for these other categories are small and also because they are combined into one minority category for the subsequent multivariate analysis.

A. Differences by Race/Ethnicity

As Table 4 shows, the only relatively large difference in charge type between the groups is for status offenses. A larger proportion of the Caucasian group has this offense type. For offense history, a large percentage point difference exists for prior referrals and previous assault referrals, with minorities having a greater proportion of the group with this offense history. In terms of personal characteristics variables, a much larger proportion of the minority group has two indicators of school problems: truancy and poor academic performance. The minority group also shows a larger percentage point difference for poor interaction skills, problem behaviors, and negative peers. Two parent-attributes show up in a larger proportion of the minority group: parental incarceration history and ineffective

parenting. Finally, a substantially greater proportion of the minority group resides in a circuit involved with the JDAI.

Table 4
Chi-Squared Results of Comparison of Significant Factors Associated with Criminogenic Risk and Need, by Racial/Ethnic Category, 2010

Offense Characteristics		Caucasian N=17,544	Minority N=5,660
Current offense	Felony	10%	16%
	Misdemeanor	45%	50%
	Status	41%	33%
Offense history	First referral </= age 12	35%	41%
	Prior referrals (yes)	62%	74%
	Assault history (yes)	33%	45%
Personal characteristics	Negative peers	61%	70%
	Learning disorder	14%	18%
	Problem behaviors	68%	78%
	Poor attitude	40%	48%
	Truancy	60%	73%
	Poor interaction skills	43%	53%
	Mental health problems	28%	23%
	Poor academic performance	55%	64%
Personal history	Out of home placement	29%	34%
Parent attributes	Parental incarceration	28%	39%
	Parent mental health problems	19%	12%
	Ineffective parenting	62%	71%
	Negative social support	14%	19%
Other	JDAI site	19%	43%
	Detained	10%	17%

B. Differences by Gender

The proportion of female referrals compared to male referrals in Missouri continues to be significantly lower. To identify potential disparities in how young women are handled and to address concerns they may be treated more harshly at certain points and more leniently at others, the risk and needs and offense characteristics of female referrals are compared to those of males.

As Table 5 shows, females and males have more factors where the proportions are similar for both genders than those where they differ by at least ten percentage points. Significantly more male referrals are for felonies and significantly more female referrals are for status charges. A much larger proportion of the male referrals (40 percent) had a first referral at age 12 or younger than females (30 percent). With these differences in charge type and offense history, one might expect differences in case processing, with the males having proportionally more of the restrictive sanctions. This issue will be discussed in more detail at the end of this paper. Other than status offenses, the only other variables where females had a higher percentage than males are a history of child abuse and neglect and parental mental health problems.

Table 5
Chi-Squared Results of Comparison of Significant Factors Associated with Criminogenic Risk and Need, by Gender, 2010

Offense Characteristics		Males N=15,532	Females N=7,672
Current offense	Felony	15%	6%
	Misdemeanor	47%	45%
	Status	35%	48%
	Using drugs	11%	9%
Offense history	First referral </= age 12	40%	30%
	Prior referrals (yes)	71%	63%
	Assault history (yes)	39%	30%
Personal characteristics	Learning disorder	17%	10%
	Substance abuse problems	31%	24%
	Problem behaviors	73%	67%
	Truancy	65%	59%
	Poor interaction skills	47%	41%
	Poor academic performance	61%	51%
Personal history	Child abuse/neglect history	20%	26%
Parent attributes	Parent mental health problems	10%	19%
	Parent drug use	23%	22%
Other	Detained	13%	9%

The analysis up to this point has been bivariate, doing a factor by factor comparison of two or more groups. However, it would be erroneous to conclude that, because equal

proportions of both genders report having poor attitudes, equal proportions should be processed in the same way by the justice system. Differences in prior offense history, current offending behavior, and many other factors may also impact how youth are handled in the justice system. The next section describes the multivariate analysis that can help us better understand how the presence of a variety of factors is associated with how youth are processed in the court system.

V. Multivariate Analysis

The summary statistics presented above provide some insight into the issues surrounding race in the Missouri juvenile justice system by providing evidence of possible disproportional representation of African American youth. The analysis also provides evidence that females and males are differentially represented at certain points in case processing. The bivariate analysis of risk and needs factors identifies significant differences in factors between groups as well as areas where they are very similar. These results provide a starting point for identifying disparities but do not provide an indication of the underlying reasons for the proportionate differences.

To address these questions, logistic regression is used to estimate the effects of multiple variables. Logistic regression is similar to linear or multiple regression except that it is used to model dichotomous outcomes where the dependent variable has only two values such as yes or no. This strategy works well with the statistics that we have presented above, because they are all yes/no decisions. Was the juvenile detained? Was the case formally processed? Using logistic regression allows us to isolate the effects of all the variables, including race, to see what effects they have on the probability of a certain court decision point.

Five models are analyzed:

Model 1: y = detained
Model 2: y = accepted
Model 3: y = formal
Model 4: y = adjudicated
Model 5: y = committed to DYS

where y (y=yes) is the dependent variable. The twenty-eight independent variables used in this study are divided into six categories. Two remaining variables apply to certain models.

Category 1 includes the presenting offense and includes the charge type (felony, misdemeanor, ordinance, incidence, or status). These are recoded as dummy variables with status as the reference category. The other presenting offense variable is 'used drugs during commitment of offense,' recoded from used drugs, used alcohol, used both, used none to used any drugs, yes or no.

Category 2 includes those variables related to offense history and includes prior referrals (yes or no), first referral age 12 or younger (yes or no), and any prior assault charges (yes or no). Demographic variables comprise category 3 and include age (continuous), male (yes or no), and minority status (yes or no). Personal characteristics comprise category 4 and include learning disorder, negative peers, poor attitude, poor interaction skills, mental health problems, substance abuse problems, and poor academic performance all coded as yes or no.

Category 5 contains the personal history variables and includes out of home placement and child abuse/neglect history. Parent attributes comprise category 6 and include parental incarceration history, parent mental health problems, parent drug use, parenting ineffectiveness, and negative social support.

Two remaining variables only apply to some models. For the detention model, a variable (yes or no) was added to distinguish the seven JDAI sites from the rest. For the models other than detention, detained (yes or no) was included.

The final models reported below include only those variables which were found to be significantly associated with the decision point being modeled at the probability level of 0.01. Thus, we are 99% sure that the differences are not due to chance alone. The value of B, beta coefficient, and the sign of the coefficient provide an indicator of the direction and magnitude of the association. The third column shows the estimated odds ratio and its confidence interval. The 95% confidence interval indicates the range of values between which the actual odds ratio is likely to be. In other words, we can be 95% confident that the true odds ratio falls between the estimated ratios given. Because this study specifically looks at racial and gender equity, any significant results for these two factors are discussed first.

A. Intake Decisions

1. Detention (Model 1)

Table 6 provides the model results for detention (y = detained). Being male (1.14) and a minority (1.49) increases the odds of being detained. Compared to having a status offense, a felony offense (8.82) is the factor associated with the greatest odds of being detained. Having a misdemeanor offense (2.12) and having used drugs and/or alcohol at the time of the presenting offense (2.38) also increases the odds of being detained. An assault history (1.40) and older youth (1.10) have increased odds of being detained. Having negative peers (1.18), problem behaviors (1.36), a poor attitude (1.51), and poor academic performance (1.21) increase the odds of being detained, as does having a history of out of

home placement (2.28) and experiencing ineffective parenting (1.43). However, those who had a first referral at age 12 or younger (0.78) have reduced odds of being detained. A parent with a history of drug use (0.85) and mental health issues (0.80) also decreases the odd of being detained. Finally, living in a circuit with the JDAI (0.69) decreases the odds of being detained.

Table 6
Logistic Regression Results for Detention Decision, 2010

Category	Variable	B	S.E.	Odds Ratio (Confidence Interval)
Current offense	Felony (vs. status)	2.178	0.066	8.82 (7.75-10.04)
	Misdemeanor (vs. status)	0.751	0.057	2.12 (1.89-2.37)
	Using drugs	0.868	0.060	2.38 (2.09-2.70)
Offense history	First referral </= age 12	-0.249	0.054	0.78 (0.70-0.87)
	Assault history	0.338	0.048	1.40 (1.28-1.54)
Demographics	Male	0.134	0.052	1.14 (1.03-1.27)
	Minority	0.399	0.051	1.49 (1.34-1.65)
	Age	0.092	0.016	1.10 (1.06-1.13)
Personal characteristics	Negative peers	0.164	0.056	1.18 (1.06-1.32)
	Problem behaviors	0.308	0.070	1.36 (1.19-1.56)
	Poor attitude	0.410	0.052	1.51 (1.36-1.67)
	Poor academic performance	0.188	0.053	1.21(1.09-1.34)
Personal history	Placement history	0.824	0.050	2.28 (2.07-2.52)
Parent attributes	Parenting ineffectiveness	0.358	0.060	1.43 (1.27-1.61)
	Parental drug use	-0.164	0.060	0.85 (0.75-0.95)
	Parental mental health issues	-0.229	0.650	0.80 (0.70-0.90)
Other	JDAI site	-0.368	0.055	0.69 (0.62-0.77)

Total cases	23,204
Chi square (df)	3057.940 (22)
-2 Log Likelihood	13864.509
% classified correctly	88.6%

2. Referral Acceptance (Model 2)

Referrals to the juvenile court can come from a variety of sources including law enforcement, school officials, and parents. Once juvenile court staff have reviewed the evidence for the referral, a determination of whether adequate evidence exists to proceed with a case is made. Table 7 provides the model results for 'referrals being accepted' (y=accepted). The model indicates that most of the significant factors decrease the odds of this decision, including being a male (0.73) and a minority (0.50). In addition, compared to status offenses, a felony (0.42) or a misdemeanor (0.74) decrease the odds of having a referral accepted, as does having a history of prior referrals (0.74). Older youth (0.88) have decreased odds of having a referral accepted, as do substance abuse problems (0.69), truancy (0.81), and having a history of out of home placement (0.84). Although most factors decrease the odds, the factors with the biggest impact on the odds of having

Table 7
Logistic Regression Results for Referral Acceptance Decision, 2010

Category	Variable	B	S.E.	Odds Ratio (Confidence Interval)
Current offense	Felony (vs. status)	-0.868	0.081	0.42 (0.36-0.49)
	Misdemeanor (vs. status)	-0.298	0.059	0.74 (0.66-0.83)
	Using drugs	1.567	0.148	4.79 (3.58-6.41)
Offense history	Prior referrals	-0.304	0.067	0.74 (0.66-0.87)
Demographics	Male	-0.309	0.059	0.73 (0.65-0.82)
	Minority	-0.690	0.054	0.50 (0.45-0.56)
	Age	-0.124	0.016	0.88 (0.86-0.91)
Personal characteristics	Substance abuse problems	-0.366	0.061	0.69 (0.62-0.78)
	Truant	-0.210	0.065	0.81 (0.71-0.92)
Personal history	Placement history	-0.170	0.063	0.84 (0.75-0.95)
Other	Detained	1.894	0.141	6.64 (5.04-8.77)

Total cases	23,204
Chi square (df)	927.752 (19)
-2 Log Likelihood	11458.220
% classified correctly	92.5%

a referral accepted are having used drugs and/or alcohol at the time of the presenting offense (4.79) and having been detained (6.64), factors associated with increased odds for this decision point.

B. Case Processing Decisions

1. Informal vs. Formal Processing (Model 3)

The third model (y=formal) dropped those cases that were not accepted. Table 8 presents the results of this model. At this decision point, being a minority (1.90) increases the odds of having a case processed formally when all other factors are held constant. The factor with the biggest odds of

Table 8
Logistic Regression Results for Formal Processing Decision, 2010

Category	Variable	B	S.E.	Odds Ratio (Confidence Interval)
Current offense	Felony (vs. status)	1.739	0.064	5.69 (5.12-6.46)
	Misdemeanor (vs. status)	0.215	0.042	1.24 (1.13-1.36)
	Using drugs	0.288	0.066	1.33 (1.17-1.52)
Offense history	First referral </= age 12	0.267	0.049	1.31 (1.19-1.44)
	Prior referrals	0.305	0.057	1.36 (1.21-1.52)
	Assault history	0.156	0.044	1.17 (1.07-1.28)
Demographics	Minority	0.640	0.046	1.90 (1.73-2.07)
	Age	0.145	0.014	1.16 (1.13-1.19)
Personal characteristics	Substance abuse problems	0.356	0.050	1.43 (1.30-1.57)
	Learning disability	-0.202	0.059	0.82 (0.73-0.92)
	Poor interaction skills	0.194	0.048	1.21 (1.10-1.33)
	Poor attitude	0.313	0.049	1.37 (1.24-1.51)
	Mental health problems	0.198	0.050	1.22 (1.11-1.34)
	Poor academic performance	0.167	0.051	1.18 (1.07-1.31)
Personal history	Placement history	0.358	0.048	1.43 (1.31-1.58)
Parent attributes	Parenting ineffectiveness	0.324	0.054	1.38 (1.24-1.53)
	Negative social support	0.215	0.053	1.24 (1.11-1.37)
Other	Detained	2.114	0.053	8.28 (7.46-9.19)

Total cases	21,459
Chi square (df)	6461.812 (25)
-2 Log Likelihood	16098.797
% classified correctly	84.2%

being formally processed is having been detained (8.28), which increases the odds. A felony (5.69) or misdemeanor (1.24) offense increases the odds that a case will be formally processed as does using drugs and/or alcohol at the time of the offense (1.33). The three offense history variables (first referral at age 12 or younger (1.31), prior referrals (1.36), and assault history (1.17) are associated with increased odds for a case being formally processed as is being older (1.16). A history of substance abuse (1.43), poor interaction skills (1.21), poor attitude (1.37), poor academic performance (1.18), and mental health problems (1.22) are associated with increased odds of a formally processed case, as is a history of out of home placement (1.43), ineffective parenting (1.38), and negative social supports (1.24). Having a learning disability (0.82) is associated with decreased odds for a case being formally processed.

2. Allegations found True, Adjudication Decision (Model 4)

The fourth model (y=adjudicated or guilty) was derived from the data used in the third model. Cases that were not formally processed were dropped. The results of this model are presented in Table 9. Being a minority (0.47) is associated with reduced odds of being adjudicated, while being male is not significantly associated with this decision point. Being

Table 9
Logistic Regression Results for Adjudication Decision, 2010

Category	Variable	B	S.E.	Odds Ratio (Confidence Interval)
Demographics	Minority	-0.748	0.100	0.47 (0.39-0.57)
	Age	-0.136	0.040	0.87 (0.81-0.93)
Personal characteristics	Mental health issues	0.473	0.131	1.60 (1.26-2.03)
	Learning disability	-0.392	0.133	0.68 (0.52-0.88)
Other	Detained	-0.360	0.106	0.70 (0.57-0.86)

Total cases	4,700
Chi square (df)	154.360 (10)
-2 Log Likelihood	3090.320
% classified correctly	89.1%

older (0.87), having a learning disability (0.68), and having been detained (0.70) are associated with decreased odds, while having mental health issues (1.60) is associated with increased odds of being adjudicated.

2. Committed to DYS

The fifth model (y=commit to DYS) was derived from the fourth set of data associated with adjudication. Those who were not adjudicated were dropped from the dataset. Table 10 presents the results of this model. Being male (1.81) is associated with increased odds of being committed to DYS, but being a minority is not significantly associated with this decision point. Felony offenses (3.36) and having been detained (2.50) for this referral have the biggest impact on being committed to DYS and is associated with increased odds. Misdemeanor offenses (1.75) are also associated with increased odds of a DYS commitment, as is being older (1.29) and receiving prior referrals (1.97). Having a

Table 10
Logistic Regression Results for DYS Commitment Decision, 2010

Category	Variable	B	S.E.	Odds Ratio (Confidence Interval)
Current offense	Felony (vs. status)	1.186	0.161	3.36 (2.44-4.64)
	Misdemeanor (vs. status)	0.537	0.156	1.75 (1.29-2.38)
Offense history	Prior referrals	0.679	0.197	1.97 (1.34-2.90)
Demographics	Male	0.614	0.142	1.81 (1.34-2.40)
	Age	0.240	0.044	1.29 (1.17-1.41)
Personal characteristics	Negative peers	-0.452	0.140	0.64 (0.48-0.84)
	Problem behavior	0.712	0.217	2.04 (1.33-3.12)
	Poor attitude	0.400	0.122	1.49 (1.17-1.90)
Personal history	Placement history	0.496	0.108	1.64 (1.33-2.03)
Parent attributes	Parental drug use	-0.349	0.117	0.71 (0.56-0.89)
	Negative social support	0.366	0.111	1.44 (1.14-1.82)
Other	Detained	0.918	0.113	2.50 (2.01-3.12)

Total cases	4,186
Chi square (df)	434.646 (16)
-2 Log Likelihood	2635.975
% classified correctly	88.0%

poor attitude (1.49), problem behavior (2.04), and negative social support (1.44) are also associated with increased odds of a DYS commitment. A parent with a history of drug use (0.71) and being associated with negative peers (0.64) decrease the odds of a DYS commitment.

VI. Discussion and Comparison between the 2004 and 2010 Studies

This study was designed to determine if racial/ethnic and gender disparities exist in how youth are processed through Missouri's juvenile justice system, to identify factors that may contribute to any such disparities, and to determine if any progress has been made in reducing disparities identified in 2004. Replicating the methods used in the 2004 study, these questions were addressed first by comparing subgroups of youth on court decision points (descriptive analysis). Next, comparisons by behaviors, risks, and needs were analyzed to determine when decisions differed for youth by gender and race/ethnicity. Then, multivariate models were developed to examine the impact of race/ethnicity and gender on court decision points after controlling for offending behaviors, risks, and needs.

Referrals

This study began with an analysis of the outcomes of referrals. African American youth had the highest proportion of referrals rejected both in the 2004 and 2010 studies (descriptive analysis). Referrals are most commonly rejected for lack of sufficient evidence. One recommendation from this study is that referral sources should be closely examined to determine if specific policies lead to this discrepancy or if better training is needed to avoid needlessly bringing African American youth into contact with the court system. Research has shown that minority youth have more contact with police. Police are a leading source of referrals to the juvenile court, although referral sources were not

analyzed as part of this study. A second recommendation is to differentiate School Resource Officer referrals from police referrals. This will enable us to differentiate the referrals coming from schools and referrals in the community to target our training efforts. Referral sources are being studied very closely in the communities that are working on the DMC project. These referral sources became a primary focus of that initiative when it was discovered that the largest source of disparities as measured by the relative rate indices was in referrals.

Detention

Research has shown that minority youth tend to be detained more than their Caucasian counterparts, and this finding holds true in Missouri. In the 2004 study, African Americans were over-represented in detention (descriptive statistics). Researchers have also found that once other factors are considered in the detention decision, race no longer is significantly related to being detained. In the 2004 study, race was not a significant factor in the multivariate detention model, but it was significant when location (rural/urban) was included in the analysis. However, in this 2010 Missouri study, in the multivariate model of the detention decision, race is significant and does increase the odds of being detained. The 2010 finding is important because it confirms the finding in the previous study when location was taken into consideration and confirms the need to do more research to understand the role of race in detention decisions. Thus, understanding the role race plays in detention decisions is the third recommendation of this study. Juvenile office staff may feel pressure from community based referral sources to detain youth. Being in a JDAI site reduced the odds of being detained, a finding which provides evidence that, as the initiative is expanded statewide, the proportion of youth detained may decrease correspondingly.

Other researchers have voiced concern that overrepresentation of minorities in detention is a major concern because pre-adjudication detention has been found to have a significant impact on subsequent court outcomes. This 2010 Missouri study did find that having been detained was significantly related to other decision points, and increased the odds of going deeper into the court system even when holding other factors such as offense severity and prior referrals constant. An analysis done of the JDAI sites compared with non-JDAI sites demonstrates that if detained, the odds of this pre-adjudication detention significantly impacting subsequent court outcomes increases in JDAI sites (See the Appendix for the complete analysis). In other words, if a youth is detained in a county that has implemented JDAI, the decision to detain a youth is given even more weight in subsequent court proceedings and has a great impact on the disposition compared to non-JDAI sites. Thus, careful monitoring of the use of the detention instrument as well and the number and reasons for overrides is warranted and is the fourth recommendation of this study. A preliminary analysis (not- shown) of whether this increased significance on subsequent court contact points impacts Caucasian and minority youth equally suggests that minority youth are impacted more. Since a recent revalidation of the detention instrument does not suggest racial bias, more analysis is needed to understand the impact of JDAI on reducing detention rates, the impact of detention on subsequent court proceeding, and whether or not race plays a differential role on the consequences of being detained.

Regarding gender differences, studies have shown that girls tend to be detained for less serious offenses than boys. In the 2004 study, gender was not a significant factor in the detention model, although proportionally more males were detained. However, in the 2010 study, gender was a significant factor in the multivariate analysis. When considering

offense seriousness, the most serious offenses, felonies and misdemeanors, significantly increased the odds of being detained. Proportionally more males than females had committed these offense types, so their higher level of detention seems appropriate. The fifth recommendation is that more attention needs to be paid to gender. This research demonstrates that the experiences of boys and girls differ and thus, gender specific services should be provided..

Referral Accepted, Petition Filed

Referrals are accepted when juvenile office staff make a determination that sufficient evidence exists to process a case through the court system. In the 2010 study, African Americans had the largest proportion of referrals rejected; while no proportional difference existed by gender for this decision point. In the multivariate model, being male and African American both decreased the odds of having a referral accepted, the same result as in the 2004 study. The factors that had the greatest impact on the odds of having a referral accepted in the model were having drug and/or alcohol use at the time of the referral and being detained. The reduced odds of having a felony or misdemeanor charge accepted compared to a status offense can be explained by the fact that standards for sufficient evidence rise as the offense gets more serious.

Formal Processing

Once a referral is accepted, if the charge is serious enough, it will be formally processed, beginning with a conference with the family and could proceed to a court hearing. Researchers have found that a higher proportion of African Americans than of Caucasians tend to be formally processed. This is the case in the 2010 Missouri study, however upon adjudication the allegations in the petition tend to be dismissed. In both the

2004 and 2010 regression models, being African American increased the odds of having a referral formally processed. This model has the most significant factors of any model tested. This is the point in the case processing when the risk and needs assessments are conducted and all these factors are available to inform the judicial decisions.

Adjudication

Research has shown that Caucasian youth tend to be adjudicated in greater proportions than African American youth. The 2010 Missouri comparison indicated the same pattern. Some researchers have referred to this pattern as a correction effect. Court officials may be addressing aggressive law enforcement strategies that result in a high referral rate for weak cases involving minorities (Dannefer & Schutt, 1982). While African Americans are disproportionately represented at earlier points in case processing, when credible evidence is required to draw a youth deeper into the system, their weak cases are dismissed. The 2010 Missouri study shows that being African American reduced the odds of being adjudicated. No gender differences were found in the comparative analysis and gender was not significant in the model for the adjudication decision.

Commitment to DYS

Studies have found that race is a significant factor in commitment decisions, even when other factors are considered. That is not the case in either Missouri study. Neither the group comparisons nor the models of the commitment decision showed that race had any impact on this decision.

According to past research studies, females are less likely to receive an out of home placement. The 2004 Missouri study found no proportional difference in male and female commitments. The 2010

comparison found that proportionally fewer females were committed, and, in the model, being male increased the odds of a commitment.

VII. Conclusion

Racial/ethnic and gender disparities in how juveniles are processed continue in Missouri's juvenile court system. In general, the representation of youth by gender and race differed at some decision points. Gender disparities are evident at the front end (detention) and the back end (commitment to DYS) of the system. Racial disparities are evident at the front end of the court system, but the courts have little influence over who gets referred to the court. The DMC project is focusing on reducing needless referrals at the community level. This effort should lead to a reduction in overrepresentation of minorities in referrals at the front end of the system and reduce the need for corrections at the back end. Also, with the implementation of an objective detention assessment tool, juvenile office staff have an enhanced foundation upon which to make decisions about detaining youth. Once in the system, corrections for aggressive referrals on weak cases are evident as minority youth have a reduced likelihood of having the referral accepted and adjudicated.

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Appendix A
Decisions by Implementation of Juvenile Detention Alternative Initiative

Logistic Regression Decision Models for JDAI versus Non-JDAI sites.

This research demonstrates that living in a circuit with the JDAI decreases the odds of being detained. Since detention can be the first entry point into the system, an analysis was done to compare referrals in JDAI sites with non-JDAI sites to see what, if any, impact the implementation of JDAI was having on subsequent court decisions. The findings in the appendix suggest how this report could differ if the JDTA was used statewide.[1] The results for each of the models are reported below. The practice of discussing the race and gender findings first is repeated. Only significant variables in both models (with the exception of the race and gender findings) will be discussed in the text.

1. Detention (Model 1)

Table A-1 presents the results of model 1 for referrals in JDAI sites and in non-JDAI sites. Being a minority in a JDAI site (1.84) increases the odds of being detained compared to being a minority in a non-JDAI site (1.32). The race finding may appear unexpected since the most recent validation of the detention instrument found that race was not significant in the regression analysis of the decisions recommended by the JDTA instrument (Yan & McElfresh, 2010). There are several possible explanations for the difference in findings. First, different datasets were used. The JDTA validation study used data from June 1, 2009 through March 31, 2010 from seven circuits, all JDAI sites. The current study uses data from January 1, 2010-December 31, 2010 and the data is from all forty-five circuits, most of whom were not JDAI sites. Second, the two studies had different objectives. The objective of the JDTA validation study was to determine if race was significant for the youth assessed using the JDTA by comparing

Table A-1

Logistic Regression Results for the Detention Decision, 2010

		JDAI Sites			Non-JDAI Sites		
Category	**Variable**	**B**	**S.E.**	**Odds Ratio (Confidence Interval)**	**B**	**S.E.**	**Odds Ratio (Confidence Interval)**
Current offense	Felony (vs. status)	2.868	0.145	17.60 (13.25-23.40)	1.887	0.075	6.60 (5.70-7.65)
	Misdemeanor (vs. status)	0.601	0.144	1.82 (1.38-2.42)	0.787	0.062	2.20 (1.94-2.48)
	Using drugs	1.464	0.134	4.32 (3.32-5.63)	0.647	0.071	1.91 (1.66-2.20)
Offense history	First referral </= age 12				-0.303	0.061	0.74 (0.66-0.83)
	Assault history	0.310	0.102	1.36 (1.12-1.67)	0.349	0.055	1.48 (1.27-1.58)
Demographics	Minority	0.608	0.102	1.84 (1.50-2.24)	0.278	0.062	1.32 (1.17-1.49)
	Age	0.154	0.039	1.17 (1.08-1.26)	0.087	0.017	1.09 (1.06-1.13)
Personal characteristics	Negative peers	0.657	0.136	1.93 (1.48-2.52)			
	Poor behavior				0.343	0.076	1.41 (1.21-1.64)
	Poor attitude	0.572	0.111	1.77 (1.43-2.21)	0.362	0.061	1.44 (1.28-1.62)
	Poor academic performance				0.244	0.060	1.28 (1.14-1.44)
Personal history	Placement history				0.849	0.060	2.34 (2.08-2.63)
Parent attributes	Parental ineffectiveness	0.712	0.150	2.04 (1.52-2.74)	0.303	0.066	1.34 (1.19-1.54)
	Parental mental health				-0.228	0.074	0.80 (0.69-0.92)
Total cases	5,831			17,373			
Chi square (df)	1528.197 (16)			1711.454 (20)			
-2 Log Likelihood	2879.817			10785.466			
% classified correctly	78.9%			65.2%			

those who were and were not detained. This is only a subset of the youth who received a referral. The current study is comparing all youth who received a referral, not just those assessed using the JDTA for placement in detention, to determine if race impacts who is and is not detained. Finally, different variables were used in the models. The current study had over twenty variables. The validation study had less than half that number.

[1] Court operating rule 28 now requires the JDTA be used statewide.

Given the significant race finding in the current report, more research is needed to validate and understand this finding before any policy decisions are based upon it. Therefore, a sixth recommendation of this study is to have the Office of State Courts Administrator replicate this study one year after the JDTA is implemented statewide. More research is needed to understand the impact of JDAI on detention rates, whether race continues to be significant, and whether race plays a differential role on the consequences of being detained. If the race finding continues to be significant, more research will be necessary to understand what policies and procedures contribute to this result and to identify ways to change these practices.

Several explanations are possible for why there is increased likelihood for minority youth to be detained in JDAI sites compared to non-JDAI sites. One can hypothesize that minority youth are overridden into the system because they do not have a suitable custodian to whom they can be released. Support already exists for this hypothesis from the most recent revalidation of the detention instrument which found that overrides, not the instrument per se, may be the contributing factor. Another hypothesis is that since most of the early JDAI sites were urban areas, JDAI may be a proxy for urban, minority concentrated locales. Further study of these issues will be able to determine how and why race matters in the detention decision. However, the most appropriate conclusion to draw from the detention model at this time is that being a minority increases the odds statewide between 1.32 and 1.84 of being detained holding other factors constant.

Although the race finding is tentative and needs further investigation, the more significant finding of the comparison between JDAI sites and non-JDAI sites is the offense type finding. The odds of being detained for a felony relative to a status offense increase

dramatically in JDAI sites (17.60) compared to non-JDAI sites (6.60). Increased odds is expected because being charged with a felony is one of the factors on the detention screening instrument. Using drugs and/or alcohol at the time of the referral also significantly increases the odds of being detained in JDAI circuits (4.32) compared to non-JDAI sites (1.91).

For most of the other variables that are significant in both models, the odds ratio between JDAI circuits and non-JDAI circuits differ only slightly. Older youth (1.17) in JDAI circuits have slightly increased odds of being detained compared to older youth in non-JDAI circuits (1.09). Slight increases in the odds of being detained exist for having a poor attitude (1.77 for JDAI sites vs. 1.44 for non-JDAI) and experiencing parental ineffectiveness (2.04 in JDAI sites vs. 1.34 for non-JDAI sites) in JDAI sites compared to non-JDAI sites. Having an assault history in JDAI sites (1.36) reduces the odds of being detained compared to non-JDAI circuits (1.48).

2. Referral Acceptance (Model 2)

As with the detention model, there are significant differences between the odds of having a referral accepted in JDAI and non-JDAI circuits. Table A-2 presents the results of model 2. Minority youth in JDAI sites (0.39) have slightly lower odds of having a referral accepted compared to minority youth in non-JDAI sites (0.80). The odds ratio for being male in the JDAI circuits (0.77) is essentially the same as in non-JDAI circuits (0.74).

The two variables that have the most significant difference in the odds of having a referral accepted are having been detained and using drugs and/or alcohol at the time of the referrals. Having been detained doubles the odds of having a referral accepted in JDAI circuits (10.35) compared to non-JDAI sites (5.15). The finding of increased odds for being

detained in JDAI sites suggests that more weight may be given to the outcome of detention decision when deciding upon whether to accept the referral because they

Table A-2
Logistic Regression Results for the Referral Acceptance Decision, 2010

		JDAI Sites			Non-JDAI Sites		
Category	**Variable**	**B**	**S.E.**	**Odds Ratio (Confidence Interval)**	**B**	**S.E.**	**Odds Ratio (Confidence Interval)**
Current offense	Felony (vs. status)	-1.033	0.137	0.36 (0.27-0.47)	-0.694	0.105	0.50 (0.41-0.62)
	Misdemeanor (vs. status)	-0.383	0.101	0.68 (0.56-0.83)	-0.204	0.073	0.82 (0.71-0.94)
	Using drugs	2.089	0.267	8.08 (4.78-13.65)	1.208	0.176	3.35 (2.37-4.72)
Offense history	Prior referrals	-0.311	0.117	0.73 (0.58-0.92)	-0.302	0.083	0.74 (0.63-0.87)
Demographics	Male	-0.266	0.100	0.77 (0.63-0.93)	-0.298	0.074	0.74 (0.64-0.86)
	Minority	-0.940	0.088	0.39 (0.33-0.46)	-0.229	0.079	0.80 (0.68-0.93)
	Age	-0.226	0.034	0.80 (0.75-0.85)	-0.096	0.020	0.91 (0.87-0.85)
Personal characteristics	Substance abuse problems	-0.642	0.094	0.53 (0.44-0.63)			
	Problem behavior	-0.463	0.130	0.63 (0.49-0.81)			
	Poor academic performance				-0.202	0.075	0.82 (0.71-0.95)
Personal history	Placement history	-0.294	0.095	0.75 (0.62-0.90)			
	Child abuse/neglect				0.251	0.093	1.29 (1.07-1.54)
Parent attributes	Parent incarceration	0.294	0.099	1.34 (1.11-1.63)			
Other	Detained	2.337	0.234	10.35 (6.55-16.37)	1.639	0.180	5.15 (3.62-7.32)
Total cases	5,831			17,373			
Chi square (df)	1528.197 (16)			311.409 (15)			
-2 Log Likelihood	2879.817			7545.169			
% classified correctly	87.9%			94.0%			

know that the instrument recommends detaining high risk offenders. Thus, in cases where a youth has been detained, the referral is more likely to be accepted. Using drugs and/or alcohol at the time of the referral significantly increases the odds in JDAI sites (8.08) compared to non-JDAI sites (3.35).

For most of the other variables that are significant in both models, the odds ratio between JDAI circuits and non-JDAI circuits differ only slightly. Slight decreases in the odds exist for being charged with a felony (0.36 for JDAI sites vs. 0.55 for non-JDAI) and a misdemeanor (0.68 in JDAI sites vs. 0.82 for non-JDAI sites) in JDAI sites compared to non-JDAI sites. Being older in a JDAI site (0.80) slightly decreases the odds of having a referral accepted compared to being older in a non-JDAI site (0.91). The odds ratio for having prior referrals in the JDAI circuits (0.73) is essentially the same as in non-JDAI circuits (0.74).

3. Informal vs. Formal Processing (Model 3)

Much like the previous models, there are significant differences between JDAI and non-JDAI circuits in terms of the decision to file a petition. Table A-3 presents the results of model 3. The odds of having a referral formally processed for a minority youth was slightly lower in JDAI circuits (1.45) as opposed to non-JDAI circuits (2.13). There are increased odds of a male being formally processed is in the non-JDAI sites (1.21). However, being male is not significant in the JDAI sites, and thus, there are no increased odds.

The two variables that have the most significant difference in the odds of having a referral formally processed are having been detained and being charged with a felony compared to a status offense. Having been detained significantly increases the odds of having a referral accepted in JDAI circuits (12.89) compared to non-JDAI sites (7.52). Being charged with a felony more than doubles the odds in JDAI sites (12.02) compared to non-JDAI sites (4.73). The increase in odds for both variables is expected as more people rely on the detention instrument in JDAI circuits.

For most of the other variables in both models, the odds ratio between JDAI circuits and non-JDAI circuits differ only slightly. Slight increases in the odds for youth referred at

age 12 or younger in JDAI sites (1.44) compared to non-JDAI sites (1.24) and for youth with prior referrals in JDAI sites (1.44) compared to non-JDAI sites (1.35). Older youth have essentially the same odds of a case being formally processed in JDAI circuits (1.17) compared to non-JDAI circuits (1.16). Parental ineffectiveness

Table A-3
Logistic Regression Results for Formal Processing Decision, 2010

		JDAI Sites			Non-JDAI Sites		
Category	**Variable**	**B**	**S.E.**	**Odds Ratio (Confidence Interval)**	**B**	**S.E.**	**Odds Ratio (Confidence Interval)**
Current offense	Felony (vs. status)	2.486	0.144	12.02 (9.06-15.94)	1.554	0.073	4.73 (4.09-5.46)
	Misdemeanor (vs. status)	0.751	0.110	2.12 (1.71-2.63)			
	Using drugs	0.693	0.142	2.00 (1.51-2.64)			
Offense history	First referral </= age 12	0.363	0.111	1.44 (1.16-1.79)	0.216	0.055	1.24 (1.11-1.38)
	Prior referral	0.367	0.123	1.44 (1.14-1.84)	0.302	0.064	1.35 (1.19-1.53)
Demographics	Male				0.193	0.051	1.21 (1.10-1.34)
	Minority	0.372	0.092	1.45 (1.21-1.74)	0.758	0.055	2.13 (1.92-2.38)
	Age	0.153	0.036	1.17 (1.09-1.25)	0.151	0.015	1.16 (1.13-1.20)
Personal characteristics	Substance abuse problems	0.298	0.105	1.35 (1.10-1.66)	0.396	0.055	1.49 (1.34-1.65)
	Learning disability				-0.244	0.069	0.78 (0.69-0.90)
	Problem behavior	0.670	0.154	1.95 (1.45-2.64)			
	Poor interaction skills	0.430	0.099	1.54 (1.27-1.87)	0.116	0.055	1.12 (1.01-1.25)
	Poor attitude				0.410	0.056	1.51 (1.35-1.68)
	Mental health problems				0.265	0.057	1.30 (1.17-1.46)
	Poor academic performance	0.331	0.109	1.39 (1.13-1.72)	0.162	0.058	1.18 (1.05-1.32)
Personal history	Placement history				0.382	0.055	1.47 (1.32-1.63)
Parent attributes	Parenting ineffectiveness	0.457	0.122	1.58 (1.24-2.01)	0.327	0.060	1.39 (1.23-1.56)
	Negative social support				0.278	0.060	1.32 (1.17-1.49)
Other	Detained	2.556	0.132	12.89 (9.96-16.68)	2.018	0.059	7.52 (6.69-8.45)
Total cases	5,123			16,336			
Chi square (df)	623.272 (15)			4420.353 (24)			
-2 Log Likelihood	3688.691			12527.848			
% classified correctly	64.4%			59.4%			

(JDAI sites 1.58 vs. 1.39) and poor academic performance (JDAI sites 1.39 vs. 1.18 in non-JDAI sites) slightly increases the odds of a case being formally processed in JDAI sites compared to non-JDAI sites. Finally, having a substance abuse problem slightly decreases the odds of having a case formally processed in JDAI sites (1.35) compared to non-JDAI sites (1.49).

4. Allegations found True, Adjudication Decision (Model 4).

Out of all of the models, model 4 shows the most difference between JDAI and non-JDAI circuits in terms of the factors that change the odds of being adjudicated. Table A-4 presents the results of model 4. Being a minority is associated with reduced odds of being adjudicated in the JDAI sites (0.20), but it is not significant in the non-JDAI model. Being male is not significantly associated with this decision point for JDAI and non-JDAI sites. None of the other variables are significant in both models.

Table A-4
Logistic Regression Results for Adjudication Decision, 2010

		JDAI Sites			Non-JDAI Sites		
Category	**Variable**	**B**	**S.E.**	**Odds Ratio (Confidence Interval)**	**B**	**S.E.**	**Odds Ratio (Confidence Interval)**
Current offense	Felony (vs. status)	-1.018	0.233	0.20 (0.12-0.31)			
Offense history	Prior referral				0.413	0.151	1.51 (1.13-2.03)
	Assault history	-0.873	0.176	0.42 (0.30-0.59)			
Demographics	Minority	-1.633	0.233	0.20 (0.12-0.31)			
	Age				-0.156	0.044	0.86 (0.79-0.93)
Personal characteristics	Substance abuse problems				0.426	0.139	1.53 (1.17-2.01)
	Mental health problems				0.574	0.151	1.78 (1.32-2.38)
	Poor academic performance				0.409	0.133	1.51 (1.16-1.95)
Total cases	1,210			3,490			
Chi square (df)	136.986 (7)			79.858 (10)			
-2 Log Likelihood	925.023			2063.619			
% classified correctly	84.0%			90.8%			

5. Committed to DYS

The models for commitment to DYS are shown in Table A-5. As with the other models, the models for the JDAI and non-JDAI sites differ. Minorities have increased odds of being committed to DYS in JDAI sites (2.35), but this variable is not significant in non-JDAI sites. Again, the increased odds of being committed for minority youth could be a consequence of the fact that the percentage of minority cases is much higher in JDAI sites. Being a male is associated with increased odd in non-JDAI sites (1.95), but it is not associated with increased odds in JDAI sites.

Table A-5
Logistic Regression Results for Commitment Decision, 2010

		JDAI Sites			Non-JDAI Sites		
Category	**Variable**	**B**	**S.E.**	**Odds Ratio (Confidence Interval)**	**B**	**S.E.**	**Odds Ratio (Confidence Interval)**
Current offense	Felony (vs. status)	1.721	0.565	5.59 (1.85-16.91)	1.116	0.175	3.05 (2.17-4.31)
	Misdemeanor (vs. status)				0.517	0.164	1.68 (1.22-2.31)
Offense history	Prior referral				0.654	0.221	1.92 (1.25-2.97)
Demographics	Male				0.665	0.156	1.95 (1.43-2.64)
	Minority	0.856	0.263	2.35 (1.41-3.94)			
	Age				0.255	0.048	1.29 (1.17-1.42)
Personal characteristics	Poor behavior				1.034	0.235	2.81 (1.77-4.46)
	Poor attitude	0.706	0.259	2.03 (1.22-3.37)			
	Negative peers				-0.664	0.152	0.52 (0.38-0.69)
Personal history	Placement history	1.634	0.261	5.13 (3.08-8.54)			
Parent attributes	Parental drug use				-0.503	0.137	0.61 (0.46-0.79)
	Negative social support				0.422	0.134	1.53 (1.17-1.98)
Other	Detained	1.665	0.352	5.29 (2.65-10.54)	0.760	0.122	2.14 (1.68-2.72)
Total cases	1,017			3,169			
Chi square (df)	254.505 (13)			288.790 (16)			
-2 Log Likelihood	495.637			2031.675			
% classified correctly	74.3%			62.0%			

The two variables that have the most significant difference in the odds of being committed to DYS between JDAI sites and non-JDAI sites are being charged with a felony

and having been detained. Having been detained more than doubles the odds of being committed to DYS in JDAI circuits (5.29) compared to non-JDAI sites (2.14) and being charged with a felony almost doubles the odds in JDAI sites (5.59) compared to non-JDAI sites (3.05). The increases in the odds for being detained and being charged with a felony is expected in JDAI sites because more weight is being given to high risk factors which research has shown to be important.

Conclusion

The comparison of JDAI sites and non-JDAI sites for each court contact point reveals important differences. The three variables that are most impacted by the location of the offense (JDAI vs. non-JDAI) are being charged with a felony, having been detained, and using drug and/or alcohol at the time of the offense. For most court contact points, the odds nearly doubled in JDAI sites compared to non-JDAI sites. The increased odds for being charged with a felony and having been detained are expected. Being charged with a felony is expected because it is one of the factors used in the detention instrument. With the training of court staff on the use of the instrument and the research behind the instrument, it is expected that they will come to rely more heavily on the detention decision at later court contact points. More research is needed to understand why drug and/or alcohol use at the time of the offense in JDAI sites leads to increased odds.

Since the impact of the detention decision is increasing in importance in subsequent court contact points in JDAI sites compared to non-JDAI sites, an important question that needs further study is whether the increased significance is impacting minority and Caucasian youth equally. A preliminary analysis (not- shown) suggests that minority youth are impacted more. Since the recent revalidation of the detention instrument does not suggest

racial bias, more analysis is needed to understand the impact of JDAI on detention rates, the impact of having been detained on subsequent court proceedings, and whether race plays a differential role on the consequences of being detained.