Disproportionate Minority Contact in the Juvenile Justice System: A Study of Differential Minority Arrest/Referral to Court in Three Cities*

A Report to the Office of Juvenile Justice and Delinquency Prevention

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Executive Summary

This report uses information from three community studies of delinquency to examine disproportionate minority contact (DMC) and factors that might affect DMC at the police contact/court referral level. Although these studies were not designed to study DMC issues and as such have some limitations in the kinds of issues that can be examined, these studies do provide the relatively unique ability to examine two often given reasons for DMC -- offending behavior and the greater presence of risk factors for contact/referral among minorities.

Three main conclusions seem warranted based on the findings presented in this report. First, there was clear evidence of DMC. At all three sites it was found that a greater proportion of minorities are contacted/referred, although at one site the rate of referral was similar for Whites and Asians.

Second, DMC can not be explained by differences in the offending behavior of different racial groups. The often stated reason for DMC – that it simply reflects the difference in offending rates among different racial/ethnic groups – was not supported by the information provided by these three studies. Although self-reported offending is a significant predictor of which individuals are contacted/referred, levels of delinquent offending have only marginal effects on the level of DMC. This finding held true for a measure of total offending and for violent and property offenses as well.

Third, DMC was substantially reduced by considering the combined effect of a number of additional risk factors for arrest. At two of the sites this risk effect is substantial and statistically significant, but the total risk variable was not significant at the third site (although DMC was reduced at the third site by the inclusion of the risk variable). Given the magnitudes of effect, it appears that multiple risk factors do a better job of explaining DMC than does delinquent behavior. At one site, the race effect on contact/referral was reduced to non-significance by the consideration of risk, while at the other two sites the race effect was substantially reduced but not eliminated.

Overall, the weight of the evidence suggests that the effect of race/ethnicity on the chance of being contacted/referred is reduced but remains significant when both offending and risk are controlled. Among the risks considered were type of neighborhood, family economic status, family structure (single parents), age of mother at first birth (teen mom), and youth educational problems, as well as other factors.

Do these observations about DMC at the arrest/referral point of juvenile justice processing imply there is racial bias in the juvenile justice system? The answer is not necessarily. If there is bias in the juvenile justice system then the kinds of findings reported here would be expected. However, the reverse statement is not necessarily correct; that is, findings of disproportionality cannot be used to conclude that there is racial bias in the system. Other factors not measured in these studies may affect the decision to contact/refer and affect DMC and are not controlled in the analyses conducted for this report. However, importantly, two of the more common reasons given for DMC, different levels of offending behavior and the presence of other risk factors, were shown not to fully explain the observed DMC. Examination of other, perhaps more subtle factors, including more direct measurement of bias, seem needed to more fully understand the origins of DMC.

The findings of this report also suggest some further directions for research to more fully understand DMC at the initial contact/arrest/referral stage. First, the need for DMC studies in multiple sites is clearly indicated. Findings can be site specific so that findings from one site may not generalize to other sites. This observation suggests that individual communities may need to develop information capacities to permit local identification of factors that lead to DMC in the community, and not rely on findings from other communities – although studies in other communities would surely provide guidance. Second, disentangling the effects of race, social class, and neighborhood on arrest/referral is difficult, given the overlap of these individual and family characteristics and environments. However, this is a critical issue and studies designed to address these issues are needed. In the current study, race, social class, and neighborhood were each highly significant predictors of contact/referral at all three sites, suggesting their importance. These factors are also likely to be correlated with additional factors that may impact DMC. Third, the finding that DMC exists even after delinquency and a selection of risk factors were controlled, suggests that identification of additional factors that influence DMC, at least at

some sites, is needed. Obvious among these are police decision making and the factors that influence such decision making (e.g., perceived public danger, availability of capable guardians, prior contact with offender, offender demeanor at time of contact, existence of police diversion programs or availability of community services, etc.), and factors influencing the likelihood of initial discovery and apprehension such as calls for service and patrol patterns, as well as additional individual characteristics.

As the above comments suggest, additional information is needed to more fully understand the causes of DMC at the police contact, arrest, court referral stage. However, this report does indicate that DMC can not be explained by differences in the offending behavior of different racial groups and that, in general, DMC is substantially reduced, but not eliminated, by consideration of additional risk factors beyond delinquent behavior.

Acknowledgement

This report on disproportionate minority contact in the Juvenile Justice System relies on work conducted by Loeber, R., Farrington, D.P., Hill, K., and Thornberry, T.P., September, 2005, in preparation of an unpublished document "Advancing Knowledge on Disproportionate Minority Contact (DMC) in the Juvenile Justice System with Longitudinal Data: A Study of Differential Minority Representation at Arrest/Referral to Court in Three Cities. This current report relies heavily on the statistical analyses prepared by Loeber et al. (2005) and extends the discussion of those results.

INTRODUCTION AND LITERATURE REVIEW

PREVIOUS STUDIES

For the past fifty years, researchers have been studying the degree to which race affects juvenile justice decision-making (Pope & Snyder, 2003). Although findings are not always consistent in the levels of disproportionate contact reported, since studies vary by location, point of contact considered, and methods employed (see Pope, Lovell & Hsia, 2002), national level data reveal that disproportionate minority contact (DMC), which we define as contact at any point within the juvenile justice system, is evident at all decision points. Moreover, DMC generally increases from earlier to later stages of processing (OJJDP, 1999). Using data from 1997 and 1998, Poe-Yamagato and Jones (2000) found that African American youth accounted for: 26% of juvenile arrests, 31% of referrals to juvenile court, 44% of the detained population, 34% of youth formally processed by the juvenile court, 32% of youth adjudicated delinquent, 46% of youth judicially waived to criminal court, 40% of youth in residential placement, and 58% of youth admitted to state prison, despite accounting for only 15% of the juvenile population nationwide. Hamparian and Leiber (1997) also found evidence of DMC in 31 of the 36 states that they studied.

More than one explanation has been given for DMC. Some argue that DMC is the result of racial bias within the juvenile justice system. Others argue that DMC is the result of minority youth committing more crimes, more serious crimes, or types of offenses that are more likely to come to the attention of the police, e.g. weapon offenses. Still others argue that DMC is, in part, produced by risk factors for delinquency that are also correlated with race, for example, coming from broken or dysfunctional homes (cf. Snyder and Sickmund, 2006; Bishop, 2005). Because of these possibilities, many studies have extended the examination of DMC by statistically controlling for relevant variables. Typically, these include offense characteristics and prior record, demographic variables, non-individual risk factors such as neighborhood characteristics, individual-level risk factors, or some combination thereof.

This report uses information from three longitudinal community studies of delinquency, conducted at Pittsburgh, Rochester, and Seattle, to examine disproportionate minority contact (DMC) and factors that might affect DMC at the point of contact/arrest/court referral. Although these studies were not designed

to investigate DMC issues and thus have some limitations in the kinds of issues that can be examined, the studies provide the relatively unique opportunity to examine two often cited reasons for the existence of DMC – differences in offending among racial/ethnic groups and the presence of risk factors for arrest that are related to race/ethnicity. As can be observed in the following literature review, although the possibility that DMC is a result of higher rates of involvement in delinquency or serious delinquency among minorities, or that social or personal risk factors for arrest/court referral are more prevalent among minorities, there is a paucity of empirical findings about these issues. And, it is the need for greater information about these issues, using multiple sites so that findings can be replicated, that provided the impetus for the design and analyses of the research reported here. This summary report draws information from three separate but coordinated site reports that provide additional details about findings from each site. These individual site reports are included as Appendices.

The research reported here is driven by two main questions. (1) The effect of self-report offending on DMC and (2) The effect of potential risk factors for arrest on DMC, and is limited to examining these two specific questions. The findings presented are important and raise additional issues and research questions about DMC at the arrest/referral stage that are not empirically considered in this report but are described in the concluding section of the report.

LITERATURE REVIEW

In this section, we describe existing literature that examines whether race effects remain significant when controlling for sets of variables, namely: offense characteristics and prior records, demographic factors, non-individual and individual risk factors, and self-reported delinquency.

Our search strategy included library searches (such as Sociological Abstracts and National Criminal Justice Reference Services), as well as input from colleagues and individual documents collected at conferences and the like. In effect, a snowball technique was used to find published studies on DMC. Although literature on DMC dates back to the 1950s, we restricted our review to more recent studies, from 1994 and forward, in an effort to capture relationships existing under current and recent policies. Even with this restriction, however, we note that in many recent publications the data analyzed for these studies were collected much earlier, ranging from 1945-2001. Although the empirical investigation in the present report covers only early contact with the juvenile justice system – contact/arrest or referral – because of the sparse literature on some central issues our review examines various decision points in

the juvenile justice system (arrest, court referral, disposition, etc.). Table 1 lists the 11 publications that met our criteria (studies from 1994 onward that control for offense characteristics, prior records, demographic factors, risk factors, or self-reported delinquency) and includes citation, data years, decision-making point, use of statistical controls, and evidence of race effects.

We are interested in three core questions:

1. Is there a race effect in juvenile justice system decision-making?
2. If so, does it remain significant after controls are added?
3. If so, does its magnitude change?

At the outset it should be noted that answering these seemingly simple questions from previous research, especially the last two, with general answers is a difficult task. The studies examine different, and multiple decision points, often with different results at each point. Some studies present a bivariate relationship between race and processing and then control for other variables, allowing an estimate of whether the effect is reduced. However, other studies only present multivariate models which do not allow for an estimate of change in the size of the effect. In addition, several studies simultaneously control for more than one type of variable in their analyses, so it is difficult at times to discern the degree to which controlling for each particular group of factors, say self-reported offending versus neighborhood characteristics, changes the effect of race on arrest. Given the way most analyses are conducted we are limited to more general or global conclusions. That said, the last three columns in Table 1 provide our best effort to respond to the three key questions. If the data were not provided to answer these questions or if the results are ambiguous we indicated NA for not available.

Disproportionate Minority Contact

On the first issue there is little disagreement. There is a noticeable level of DMC in the juvenile justice system. Minority youth, especially African American and Hispanic youth, are generally more likely to have contact with the juvenile justice system at all stages, from arrest to confinement. The empirical studies reviewed here find that, before control variables are added to the equation, differences by race and ethnicity are quite evident. In one of the most comprehensive reviews of this topic Engen, Steen, and Bridges (2002) performed an empirical analysis across 125 studies addressing the relationship between race and juvenile justice, as well as criminal justice, outcomes. They found that race effects were, by and large, significant.

Race Effects When Controls Are Added

The next to last column examines whether race effects remain statistically significant once control variables for offense characteristics, risk factors, etc. are added to the equations. The variables that are actually controlled in each study are listed, by type and by specific variable, in the middle columns of Table 1.

The effect of race on processing begins to change somewhat when controls are added. In most studies the impact of race remains significant in the presence of controls but in several cases the results are "mixed". That is, race is significant at some decision points but not others or when some variables are controlled but not others. For example, Leiber and Jamieson (1995) found significant race effects at diversion, petition, and initial appearance, but not at further processing, adjudication or disposition.[1] Interestingly, at some stages they find that African American youth are treated more harshly while at others more leniently. Only one study, Bridges and Steen (1998), finds that race is reduced to statistical non-significance once other variables are controlled. However, in that case, decision-makers' attributions that were shown to depend on race are included in the model, so it can not be concluded that race is inconsequential in processing outcomes. Bridges and Steen (1998) conclude that these attributions held by probation officers are one of the mechanisms that produce differential outcomes. Although these differences in the impact of race are noted, the general conclusion from these studies is that race remains a significant predictor of juvenile justice system processing after introducing various statistical controls.

Whether the size of the race effect on juvenile justice system processing remains the same or is reduced in the presence of statistical controls is difficult to determine given the nature of the available literature. We feel able to assess this question for six of the studies we reviewed, and these are listed in the last column of Table 1. In all six cases the magnitude of the race effect was reduced. In Bridges and Steen (1998) the race effect is smaller and not significant. In DeJong and Jackson (1998), there is no significant difference between African American and White youth in the light of controls but the difference between Hispanic and White youth becomes significant for referrals (but not placement) when population density is added to the equation.

[1] Definitions are provided by Leiber and Jamieson 1995: 372

In the other studies the impact of race, while remaining statistically significant, is smaller – sometimes substantially so. For example, in a New Zealand study, Fergusson et al. (2003) report that the bivariate ratio of minority to non-minority youth being processed was 4.1. When self-reported offending was controlled it dropped to 2.1 and when self-reported offending and offender characteristics were jointly controlled it further dropped to 1.6. Similar declines in magnitude are reported in the other studies. It is interesting and important to note that only one study, Fergusson et al. (2003), examined the influence of self-reported delinquency.

Summary

Overall, two general conclusions seem warranted. First, there is disproportionate minority contact with the juvenile justice system. Minority youth are more likely to have contact with the system and to penetrate further into it than non-minority youth. Second, when variables measuring individual characteristics, offending patterns, and offense characteristics are held constant, the effect of race typically remains statistically significant but typically also becomes smaller in size. Thus to some extent the race differences in processing can be understood, in part, by these other variables. We now turn to the empirical examination of these same issues using the data from the studies in Pittsburgh, Rochester, and Seattle.

Table 1

Summary of Studies Used

Citation	Data Years	Decision Point	Controls Types	Specific Controls	Original Race Effect Significant	Race Effect with Controls Significant	Race Effect Reduced with Controls
Bridges, G.S. and S. Steen. (1998). "Racial disparities in official assessments of juvenile offenders: Attribution stereotypes as mediating mechanisms." American Sociological Review 63(4): 554-570.	1990-1991	narratives on negative internal and external attributes, risk of re-offending, and sentencing recommendation	offense characteristics and prior contacts, non-individual risk factors, demographics, individual risk factors	depends on the model: age, sex, present offense, prior record, county identity, PO identity and race, detained prior to adjudication, violent offense, negative internal and external attributes, risk of offending	yes	no	yes -nonsignificant
Dejong, Christina and Kenneth C. Jackson. 1998. "Putting Race into Context: Race, Juvenile Justice Processing, and Urbanization." Justice Quarterly 15:488-570.	1990	referral to court, placement	offense characteristics and prior contacts, non-individual risk factors, demographics, individual risk factors	population density	yes	yes/mixed	yes/mixed
Farrington, D. P., R. Loeber, M. Stouthamer-Loeber. (2003). "How Can the Relationship between Race and Violence be Explained?" Pp. 213-237 in *Violent Crime: Assessing Race and Ethnic Differences* , edited by D. F. Hawkins. Cambridge: Cambridge University Pr	1987-1999	reported and court violence	offense characteristics and prior contacts, non-individual risk factors, demographics, individual risk factors and self-report delinquency	child factors, child-rearing factors, socioeconomic factors, parent factors	yes	yes	reduced

Table 1 (Continued)

Summary of Studies Used

Citation	Data Years	Decision Point	Controls Types	Specific Controls	Original Race Effect Significant	Race Effect with Controls Significant	Race Effect Reduced with Controls
Feld, B. C. (1995). "The Social Context of Juvenile Justice Administration: Racial Disparities in an Urban Juvenile Court." Pp. 66-97 in *Minorities in Juvenile Justice* , edited by K. K. Leonard, C. E. Pope, and W. H. Feyerherm. Thousand Oaks: Sage Publications	1986	sentencing	offense characteristics and prior contact	depends on model: prior/current, records, home removal, secure confinement dispo, age, gender, attorney	yes	yes	n/a
Fergusson, D. M., L. J. Horwood, and N. Swain-Campbell. (2003). "Ethnicity and Criminal Convictions: Results of a 21-year Longitudinal Study." *The Australian and New Zealand Journal of Criminology* 36(3): 354-367.	1977-1998	rate of conviction	offense characteristics and prior Contacts, non-individual risk factors, demographics, individual risk factors and self-report delinquency	age, SES, left school, gender, self-reported offenses (prop/violent and others)	yes	yes	reduced
Frazier, C. E., D. M. Bishop, and J. C. Henretta. 1992. "The Social-Context of Race Differentials in Juvenile Justice Dispositions." Sociological Quarterly 33:447-458.	1987	intake recommendation, court referral, and court disposition	offense characteristics and prior contacts, non-individual risk factors, demographics	depends on the model: gender, offense severity, priors, severity of priors, racial income inequality, %white, %black, index crime rate, race x racial income inequality, race x %white, race x white poverty, race x index crime, race by juv. arrest rate	na	yes	na

Table 1

Summary of Studies Used

Citation	Data Years	Decision Point	Controls Types	Specific Controls	Original Race Effect Significant	Race Effect with Controls Significant	Race Effect Reduced with Controls
Leiber, M. J. and K. M. Jamieson. (1995). "Race and Decision Making Within Juvenile Justice: The Importance of Context." *Journal of Quantitative Criminology* 11(4): 363-388.	1980-1991	further processing, diversion, petition, initial appearance, adjudication, and judicial disposition	non-individual risk factors, demographics, individual risk factors	attitudes in punishment and racial diff., poverty, racial inequality, juvenile arrests, age, gender, school problems, drop outs	n/a	yes/mixed	n/a
Leiber, M. J. and K. Y. Mack. 2003. "The individual and joint effects of race, gender, and family status on juvenile justice decision-making." Journal of Research in Crime and Delinquency 40:34-70.	1980-1991	further processing, diversion, petition, initial appearance, adjudication, and judicial disposition	offense characteristics, non-individual risk factors, demographics, individual risk factors	gender, family status, age, attending school, prior referrals, court authority, # of charges, crime severity and type	yes/mixed	yes/mixed	reduced
Sealock, M. D. and S. S. Simpson. (1998). "Unraveling Bias in Arrest Decisions: The Role of Juvenile Offender Type-scripts." *Justice Quarterly* 15(3) 427-457.	1968-1975	arrest	offense characteristics and prior contacts, non-individual risk factors, demographics	gender, SES, age, offense seriousness, # of previous contacts, officer witnessed offense, gender typing of offense	yes	yes	n/a
Thornberry, T. P. (1979). "Sentencing Disparities in the Juvenile Justice System." *The Journal of Criminal Law and Criminology* 70(2): 165-171.	1945-	sentencing	offense characteristics, non-individual risk factors	seriousness, prior record and SES	yes	yes	reduced

Table 1

Summary of Studies Used

Citation	Data Years	Decision Point	Controls Types	Specific Controls	Original Race Effect Significant	Race Effect with Controls Significant	Race Effect Reduced with Controls
Wordes, M. and T. S. Bynum. (1995). "Policing Juveniles: Is there Bias Against Color?" Pp. 47-65 in *Minorities in Juvenile Justice* , edited by K. K. Leonard, C. E. Pope, and W. H. Feyerherm. Thousand Oaks: Sage Publications.	1990	referral and custody decisions	offense characteristics and prior contacts, non-individual risk factors, demographics	gender, age, # of priors, co-offenders, victim injury, drug charge, weapon, department (1-7)	yes	yes/mixed	n/a

METHODS

STUDY SELECTION AND DESCRIPTION

The three studies from which data are drawn for this report are the Pittsburgh Youth Study, the Rochester Youth Development Study, and the Seattle Social Development Project.[2] These three studies are among the best available longitudinal studies of delinquency, with repeated measures of delinquency over the juvenile years, records of official delinquency at each age, and measurements of a wide range of risk factors. (Descriptions of these studies can be found in Thornberry and Krohn, 2003). Combined, the three studies include African-Americans, Hispanics, Asian Americans, and Whites, and in Seattle information about both genders is available.

The Pittsburgh Youth Study sample is based on a probability sample of boys in grades 1, 4 and 7 in inner-city Pittsburgh public schools in 1988. Initially, approximately 1000 boys from each grade were selected and 85% of these boys and their parents participated in a screening assessment. Based on the screening assessment, the 30% most disruptive/delinquent boys in each grade were included in the sample along with a random selection of the remaining 70% less disruptive/delinquent boys to achieve a final sample of 500 boys in each grade, roughly half high-risk and half lower-risk. These boys and their caretaker were followed longitudinally. Just over half were White and just under half were African-American, reflecting the racial composition of the included public schools at that time. For this report the youngest (grade 1) and oldest (grade 7) cohorts are used.

The Rochester Youth Development Study sample is comprised of a stratified sample of 7th and 8th grade students in the public schools of Rochester, New York in 1988. To increase the number

[2] The Denver Youth Survey (DYS) and a related study, the Denver Neighborhood Study (DNS), were originally considered for inclusion in this list of studies. However, the longitudinal DYS sample was specifically drawn from only high-risk neighborhoods of Denver and does not provide a representative city sample from which inferences about DMC, in general, can appropriately be made. In addition, the sampling results in restricted ranges of many of the risk factors so that the statistical examination of such risks as an explanation for DMC can not be appropriately conducted. The DNS is a cross-sectional study of the entire city of Denver and being cross-sectional limits its comparability to the other three sites. It also has a very small number of African-Americans, which reflects the low proportion of African-Americans in Denver. Also, given the small sample sizes of Whites in the DYS and African-Americans in the DNS it was necessary (and for Denver appropriate) to use a more inclusive measure of offenses that lead to arrest in order to have sufficient arrests for analyses by racial subgroup. This also made cross-site comparisons difficult. For these reasons, findings from the Denver studies are not included in this report. Interested readers can obtain a copy of a report of the findings from the Denver studies from the DYS or from OJJDP.

of high-risk cases included in the sample, males (75% versus 25%) and students living in high arrest-rate areas of the city were over-represented in the final sample of 1000 students and their caretakers. The sample can be weighted to represent the original total 7th and 8th grade cohort of the city. The sample is 68% African American, 17% Hispanic, and 15% White. For this report, the Rochester sample is limited to males because the number of females available for analysis requiring estimates of arrest by racial group is too small to provide stable estimates.

The Seattle Social Development Study sample was drawn from 5th grade students attending eighteen elementary schools serving high-crime neighborhoods of Seattle in 1985. The study nests an intervention study initiated at first grade entry in 1981 within the longitudinal study. From the population of 1,053 students entering grade 5 in the participating schools, 808 consented to participate and form the longitudinal sample. During the study, because of mandatory busing to achieve racial balance, all schools in the study served at least two different neighborhoods of the city. Of the sample, 49% are female; 46% are European Americans; 24% are African Americans; 21% Asian American; and 9% have other ethnic group identity.

It should be noted that although city names are used in the titles of the three research projects, the analyses of the samples used do not necessarily provide generalizations to the full cities. When appropriately weighted, the Rochester project does so generalize, the Pittsburgh project generalizes to inner-city neighborhoods of Pittsburgh, and the Seattle project generalizes to high-crime neighborhoods of Seattle.

Because the Pittsburgh sample includes only males and, for this report, the Rochester sample is limited to males, the findings described in this report, which describe cross-site findings, focus only on males. Findings about females are available at the Seattle site and are described in the Seattle report in an Appendix.

APPROPRIATENESS, STRENGTHS AND LIMITATIONS OF THE STUDIES FOR DMC ASSESSMENT

The studies used in this report have both strengths and limitations in their ability to address decision-making in the juvenile justice system, especially whether there are racial or ethnic differences in the prevalence and frequency of contact at different stages of the juvenile justice

system. All three of these longitudinal studies were designed as individual level investigations of the development of delinquent behavior using community samples and are especially focused on conditions leading to and explanations for delinquent and drug use behavior. A part of this focus includes information about officially recognized delinquent behavior and juvenile justice system experience. However, the studies were not specifically designed to address the issue of disproportionate minority contact. Thus, for example, the studies did not attempt to select samples in such a way to insure that a sufficient number of each race/ethnic group would be available for arrest, referral to court, or court disposition analyses. Thus, the ability to examine racial differences throughout the system is limited for some studies (e.g., see footnote 1).

The studies also did not collect information from/about decision-makers so that a direct examination of the issue of racial bias among juvenile justice decision-makers cannot be made. Although several potential factors that could affect DMC can be examined and controlled in analyses of data from these studies, the existence of racial bias can not be demonstrated with the available data. In addition, factors other that racial bias may still remain. For example, we do not have measures of the willingness of a victim to press charges or of the behavior of by-standers.

The design of these longitudinal-community studies of individuals is in sharp contrast with typical studies of decision-making in the juvenile justice system. Most studies of decision making sample cases from the system to maximize the ability to observe decisions and investigate decision making processes. These studies are based on official records drawn from the files of the police, court, or youth corrections. As a result, these studies are severely limited in their ability to analyze information about prior delinquent behavior and personal characteristics of a juvenile to see what role they may play in our understanding of DMC. As indicated earlier in the literature review, most of these studies are limited to controlling for characteristics of the offense (e.g. its seriousness), prior official record, demographic characteristics, or area of residence. Some of these studies also collect information from/about decisions and decision makers to more directly address the issue of potential racial bias (e.g., Bridges and Steen, 1998), which, as noted above, is different from the orientation of most community studies.

The great strength of the longitudinal community studies used in this report is the detailed understanding of individual offending and characteristics collected in prospective interviews. Two areas are particularly important in filling gaps in our understanding of DMC. First, at each interview the studies collected detailed reports about involvement in delinquent behavior, including drug use. This information describes offending patterns from the perspective of the individual and is not filtered through the lens of official decision makers. As a result, we can examine a very central question: Do racial and ethnic differences in contact with the juvenile justice system result from differences in self-reported offending? As indicated in the literature review, this issue has rarely been investigated in previous studies because very few studies have access to both self-report and official data.

Second, the studies have also collected information about a host of major risk factors for involvement in delinquency. Indeed, all three studies have significantly contributed to the identification of important risk factors for delinquency and other problem behavior. (See the respective chapters in Thornberry and Krohn, 2003). Thus the current investigation can address the following question: Are racial and ethnic differences in contact with the juvenile justice system reduced or eliminated when core risk factors for delinquency, and presumably therefore for official contact, are held constant?

In sum, the studies used in this report were not designed to investigate decision making; they were originally designed to investigate the causes and correlates of delinquency, especially serious, chronic and violent delinquency. As such, there are some DMC issues that can be adequately investigated and other issues that cannot. On the positive side, however, the original designs of these studies provide information that is generally absent from the literature on DMC. In particular, this report investigates the role of self-reported offending and individual risk factors in DMC within the juvenile justice system.

MEASURES

To increase the comparability of measures across the potential studies used in this report, researchers from each of the projects (David P. Farrington, Karl Hill, David Huizinga, Rolf Loeber, and Terence P. Thornberry) were joined by James Herbert Williams (an expert in African Americans' representation in the justice system) in a meeting in November, 2003 to consider what measures would be needed and available at all sites to examine DMC issues. This meeting and subsequent communications identified a set of definitions and measures that were available and could be used in common analyses across sites. The available measures, although not always identical, were very similar in content as described below.

Age Period Covered

Because the prevalence of arrest/referral in an annual period within the samples employed is sufficiently small for certain offenses, a factor that affects reliability of analyses, data from several years of each of the longitudinal studies were combined to provide multiple year measures at each site. There is some variation in the ages included at the sites. In Pittsburgh, the arrest and delinquency data used are from ages 13-17, with risk factors measured in the same age window. In New York, the age of majority is 16, so to maintain a JJS focus in Rochester, the arrest and delinquency data used are from ages 13-15, with risk factors measured in the same age period. In Seattle, arrest and delinquency data used are from ages 13-17 with the majority of risk factors measured during ages 13-14, thus providing some temporal ordering for the risk analyses.

It should be noted that the use of multiple year measures does provide some concern for the temporal ordering of the measurement of arrest, self-reported offending, and risk factors, but the data are sufficiently sparse that they do not permit analyses that maintain complete time order. However, all the measures do reflect the same or earlier age period and many of the risks are constant or precede the age period examined.

Ethnicity/Race

Ethnicity was defined through self-reported ethnic/racial identification by reports from either the youth respondents or their caretakers. The following groups became the focus of the study: African Americans, Hispanics, Asian Americans, and European Americans (Whites). Other ethnic groups were not adequately represented in any of the samples to permit analyses. Hispanic identification included various socio-cultural groups loosely termed Hispanic that vary by national origin.

Contact, Arrest, Court Referral

All of the sites had information about (1) arrest (that includes officially recorded police contact) or (2) police arrest/contact that resulted in court referral, or (3) both. This information provided an early point of contact with the juvenile justice system that was available across sites. Although the possibility of examining DMC at later stages of the juvenile justice system was considered, not all sites had available or sufficient data with which to examine processing at these later stages. Thus, for the purpose of this report, attention focuses on officially recorded contact/arrest or court referral. To the extent possible, sites with information that could be deemed contact/arrest leading to court referral used that information and others used contact/arrest. Given this variation, for common nomenclature, the measures of contact/arrest, and referral are referred to in this summary report simply as contact/referral.

Delinquency

Although there was cross-site commonality across most of the self-report delinquency measures available within each study, a decision was made to focus on specific types of offenses where it was believed DMC would be most likely observed and for which there was reasonable comparability between arrest charges and self-report delinquency items. These included Violent Offenses, Property Offenses, Weapon Offenses, Drug Selling Offenses, and Drug Use Offenses. The arrest offenses and corresponding self-report items are listed in Table 2.

The replication of analyses using similar measures across multiple studies is important, since it permits examination of the consistency of findings across multiple settings. Conceivably, findings about DMC may or may not replicate across different communities. An advantage of the current study is that such replication can be examined across the three study sites. For the purpose of this summary report, we thus focus most attention on three summary delinquency measures – Total Offenses (a measure including all of the offenses considered), Violent Offenses, and Property Offenses that were analyzed at all three study sites. It should be noted that the Rochester total offense measure excludes drug offenses, since these were not included in analyses at that site. The interested reader can learn about other additional offending measures in the individual site reports included as Appendices.

The potential for and level of differential validity of self-reports of delinquent behavior by race has been noted by Hindelang et al. (1981) and Huizinga and Elliott (1986), among others. Of importance, however, Farrington et al. (1996) using the Causes and Correlates self-report measure did not find evidence for differential validity by race using data from the Pittsburgh project. A good summary of these findings is provided in a summary of the use of SRD by Thornberry and Krohn (2000). Given the variability in findings, it is uncertain whether differential reporting by race has an effect on the findings reported here, but the findings of Farrington et al. suggests such effects may be minimal. However, the possibility exists and should be noted by the reader.

Risk Factors

In addition to delinquency, a number of other factors that might influence the chance of disproportionate contact with the justice system were identified. Although not all risk factors used at one site were available or had equivalent measures at all sites, care was taken to insure that most of the risk factors selected for analysis had at least general measurement similarity or similar content across the studies. Although there are some differences across projects in the specific measures, each of the projects had reasonably similar measures of most of the selected factors. These factors and the significance of their relationship to being arrested are listed in Table 3. In Table 3, within general content areas, the risk factor used at each site is indicated,

with the letters P, R, S being used to represent the sites Pittsburgh, Rochester, and Seattle, respectively, and a "-" or "na" to indicate that the factor was not used/available at a particular site. As noted above, the Pittsburgh site examined DMC in two separate cohorts, the youngest and the oldest two cohorts of the sample. The findings related to these cohorts are labeled Y and O, respectively.

As can be seen in the Table 3, family socioeconomic status, family structure, age of mother at first birth, educational/academic capability and performance factors, carrying a hidden weapon, gang membership, and neighborhood poverty are all related to arrest/referral at each of the three sites. In addition, physical discipline or harsh punishment, low mother or parent education, and lack of guilt are significant predictors in the two sites that included these measures. Although there is substantial similarity in the significance of the majority of these potential risk factors, there are also some site differences. For example, family member in trouble with the law is highly significant only in Rochester and measures of hyperactivity and related problems are significant in two of the three sites. There are also differences between the two separate cohorts of the Pittsburgh study, suggesting the possibility of a period or other effect.

For the purpose of this summary report, the measure of risk used in analyses is a sum across the entire list of risk factors used at each site, where each risk is coded as being present or absent for a given individual. The measure thus provides a count of the number of risks facing a particular individual. Findings for other summative measures of risk used at the different sites can be found in the individual site reports in the Appendices.

The selection of a summative risk measure was based on the following considerations. The projects of OJJDP's Program of Research on the Causes and Correlates of Delinquency have found that it is often the composite or sum of a number of risk factors that is most efficacious in predicting delinquency and other outcomes. This is often referred to as a dose-response relationship, implying that a variety of factors may contribute to increasing risk, but that for any individual it is the sum or combination of factors, rather than the unique explanatory power of a single variable, that has the greatest explanatory power. In addition, although there is substantial overlap, the measurement and selection of risk variables varies across studies. Also, it was found

that risks may vary by type of offense considered (see for example the Rochester report), and that the strengths of risks vary by site (and by sample in Pittsburgh) (see Table 3). Thus, although it would be useful to identify particular risks as more important, it was anticipated that the identification of specific important risks or a rank ordering of risks by importance that could be generalized across types of offenses and sites was unlikely. For these reasons, the use of a summary risk scale is appealing, and it was decided to use the sum of risks as a single measure representing the different risk factors.

Table 2
Arrest and Self Reported Delinquency Items used in the Across Project DMC Analyses
Common Across-Project Measures

	Arrest Offense	Self Reported Delinquency Items
Violence		
	Assault – Aggravated	Attacked with weapon or intent to seriously injure Gang Fights
	Assault – Simple	Various items measuring minor assault, such as Hit someone with intent to hurt them, Thrown objects with intent to injure
	Sex Assault	Physically hurt/threatened to get sex Had sex against person's will
	Robbery	Used weapon, force, strong arm to get money or things from people
	Homicide/Manslaughter	Follow-ups or other information from assault items
	Domestic Violence	Follow-ups or other information from assault items
Total Violence	**Combination/Sum of the above arrests for violence**	**Combination/Sum of above violence offenses**

	Arrest Offense	Self Reported Delinquency Items
Property		
	Arson	Purposely set fire to ...
	Auto Theft	Stolen a motor vehicle such as car or motorcycle
	Burglary	Gone into a building to steal something
	Fraud – Credit Card, Other	Used checks, credit cards, fake money illegally
	Fraud – Forgery, etc.	Forged someone's name on a check or other legal document.
	Joyride	Taken a car/motorcycle for a drive without the owner's permission
	Stolen Goods	Bought, sold, or held stolen goods
	Grand Theft $50+	Stolen things worth $50-100 Stolen things worth more than $100
	Petty Theft LT $50	Stolen things worth $5 or less Stolen things worth $5-50
	Unspecified Theft	Shoplift (Not specified in above theft items) Stolen something from a store
	Vandalism	Purposely damaged or destroyed property not belonging to you
	Auto Break-in /Burglary	Broken into a car to steal something
Total Property	**Combination/Sum of the above arrests for property offenses**	**Combination/Sum of the above property offenses**

Table 2 (Continued)
Arrest and SRD Items used in the Across Project DMC Analyses
Common Across-Project Measures

	Arrest Offense	Self Reported Delinquency Items
Weapon Offense		
	Concealed Weapon	Carried a hidden weapon
Drug Offenses		
	Drug Sales	Sold marijuana Sold Hard Drugs
	Poss. MJ/ Paraphernalia	Used marijuana
Total Drug Offenses	**Combination/Sum of the above arrests for drug offenses**	**Combination/Sum of the above drug offenses**
Total Common Across-Project Offenses	**Combination/Sum of all above arrests (violence, property, weapon, and drug offenses)**	**Combination/Sum of all above reported offenses (violence, property, weapon, and drug offenses)**

Table 3
Risk Factors for Arrest/Referral

Variable/Risk	P	R	S	Pittsburgh	Rochester	Seattle
FAMILY SOCIOECONOMIC STATUS						
Family on Welfare	P	R	-	Y *** / O ***	***	na
Poverty	-	-	S	na	na	***
FAMILY STRUCTURE						
Family Structure (1 or 2 Parent)	P	-	S	Y *** / O *	na	*
Broken Home	-	R	-	na	***	na
Number of Siblings	P	-	S	Y ** / O	na	+
PARENTING						
Supervision	P	-	-	Y ns / O ***	na	na
Physical Punishment	P	-	-	Y ns / O **	na	na
Harsh Discipline	-	-	S	na	na	*
PARENT CHARACTERISTICS						
Age of Mother at First Birth	P	R	S	Y *** / O ***	***	***
Poorly Educated Mother	P	-	-	Y ** / O **	na	na
Low Parent Education	-	R	-	na	***	na
Nr. of police contacts for female caretaker	P	-	-	Y ns / O ns	na	na
Mother Trouble with the Law	-	-	S	na	na	ns
Number of police contacts for male caretaker	P	-		Y ns / O ns	na	na
Father Trouble with the Law			S			ns
Member of Family in Trouble with the Law	-	R	-	na	**	na
YOUTH CHARACTERISTICS						
HIA- Hyperactivity/Inattentive/Attention Deficit	P	-	-	Y ns / O **	na	na
Achenbach Hyperactive	-	R	-	na	***	na
Hyperactive/Impulsive	-	-	S	na	na	ns
Repeated Grade	P	-	S	Y * / O ***	na	***
CAT Reading Score	P	R	-	Y * / O **	***	na
CAT Language Score	P	-	-	Y ns / O ***	na	na
CAT Math Score	P	R	-	Y ns / O **	**	na
Poor Grades	-	-	S	na	na	***

Table 3 (Continued)
Risk Factors for Arrest/Referral

YOUTH CHARACTERISTICS (Continued)	P	R	S	Pittsburgh	Rochester	Seattle
Lack of Guilt	P	-	S	Y ** / O ***	na	*
Carried Hidden Weapon	P	R	S	Y * / O ns	***	***
Used Weapon in Serious Delinquency	P	R	-	Y ns / O ns	***	na
Ever member of a Street Gang	P	R	-	Y ns / O *	**	na
Gang Membership	-	-	S			***
NEIGHBORHOOD CHARACTERISTICS						
Wilkstrom Neighborhood SES (See Pittsburgh report for definition)	P	-	-	Y *** / O ***	na	na
Percent Neighborhood Poverty	-	R	-	na	**	na
Bad Neighborhood (See Pittsburgh and Seattle reports for definition)	P	-	S	Y ** / O ns	na	**
Perception of Neighborhood Disorganization	-	R	-	na		na

*** p≤ .000 ** p≤.01 * p≤.05 + p≤.10 ns – Not statistically significant
na: Not available at the indicated site

Note: The significance levels for Pittsburgh and Rochester reflect the significance of the factor as a direct influence on arrest/referral. For Seattle, the significance level reflects the effect of the factor after controlling for self-reported delinquency and race among active offenders.

Analytic Strategy

To examine whether the observed disproportionate minority contact/arrest/referral could be explained by self-reported delinquency and/or explained by risk factors present in these youngsters' lives, minority status, self-reported delinquency, and an index of risk were used in a sequence of logistic regressions. These analyses predicted arrest in a hierarchical fashion – first entering minority status, followed by a delinquency measure, and followed finally by the index indicating the number of risk factors facing an individual. If disproportionate arrest/referral rates could be explained by level of delinquency or by the risk factors, at each step the effect of minority status in these models should be reduced and possibly could become non-significant.

This strategy, the use of reduced-form equations, is a straight-forward and parsimonious way to address the research questions, and is the design followed in most of the literature examining such DMC issues. It has the advantage of indicating the effect of minority status on the probability of contact/referral and then examining whether this observed effect can be explained by level of involvement in delinquent behavior, by additional risk factors for contact/referral while controlling for level of delinquent behavior, or by their combination.

As noted above, because each of the studies is a longitudinal study, the data used in the analyses cover multiple years. To provide comparability across sites, a generally common age period available across projects is used. Delinquency and contact/referral data are cumulative over the ages 13-17 for the Pittsburgh and Seattle sites and, because the age of majority in New York is 16, are cumulative over the ages 13-15 for the Rochester site. In Pittsburgh and Rochester, the risk factors represent time-invariant characteristics or are averages over the age periods examined and in Seattle are invariant or cover the ages 13-14. Because the research questions posed at the initiation of this research effort are not inherently developmental or longitudinal in nature, the developmental nature of the studies is not employed in the analyses. For the purpose of using logistic regression, the arrest/contact variable was coded 1 if arrested in the specified age period for the type of offense being examined, and 0 if not arrested.

FINDINGS

MAIN EFFECTS OF RACE AND ETHNICITY

The first question is: are there different levels of racial/ethnic group contact/referral within the juvenile justice system in each of the three cities studied? The answer is unequivocally yes. Table 4 represents the core information for the Total Common offense measure which is the sum of the offenses in all of the categories studied. In all three cities, African American youth have the highest rate of contact/referral, and in all three cases they have significantly higher rates than Whites. In addition, in Rochester, the African Americans have a significantly higher rate than Hispanics. Also, in Rochester, Hispanics have a significantly higher rate than Whites, and in Seattle, the Asian Americans have a marginally higher rate of contact/referral (p=.08) as compared to Whites.

The overall contact rate with the juvenile justice system is somewhat lower in Rochester than in the other two cities. This appears to be primarily a function of different ages of jurisdiction for the juvenile courts across the states. New York has the lowest age cut-off –- the sixteenth birthday –- for jurisdiction to shift to the criminal justice system. This difference makes direct cross-site comparisons difficult and it is probably best to focus on whether statistical relationships, e.g. between race and juvenile justice system contact, is the same or different across cities rather than on absolute comparisons. In this case the answer seems clear, African American youth have higher levels of contact than Whites and, at least in Rochester, Hispanics do too.

In addition to total common offenses, we also investigated several specific types of offending. These offense-specific comparisons yield the same basic conclusion. In Rochester for both violent and property crimes both African Americans and Hispanics have significantly higher rates than Whites. The Pittsburgh project examined four offense types –- violence, property, weapons, and drug use – for their youngest and oldest cohorts. In all cases, the rate of contact/referral within the juvenile justice system is significantly higher for African Americans than for Whites. Finally, in Seattle African American youth have higher rates of contact than Whites or Asian Americans for violence, property, and drug offenses. There are few differences

between Whites and Asian Americans; only for property is there a significant difference with Asian Americans having a higher contact/referral rate.

Summary

The consistency of these findings is compelling. As with many other studies, those in Pittsburgh, Rochester, and Seattle show that African American youth are significantly more likely to come into contact with the juvenile justice system than Whites. In Rochester, they are more likely to have juvenile justice system involvement than Hispanics and in Seattle they are more likely to have contact than Asian Americans. In the one city that could investigate it, Rochester, we see that Hispanics are more likely to have contact than Whites. And, in the one city where information about Asian Americans was available, Seattle, there appear to be few differences between Asian Americans and Whites.

This main effect of minority status on juvenile justice system contact is hardly surprising, it comports with previous research and common observation. The question before us now is the extent to which these studies can shed light on the reasons for this effect.

Table 4
Prevalence of Official Arrest/Contact for Total Common Offenses by Race/Ethnicity

	African American	White	Hispanic	Asian American
Pittsburgh				
Youngest Sample	55.4 (1)	28.2	---	---
Oldest Sample	51.2 (1)	33.7	---	---
Rochester	38.7 (1)(2)	11.5 (4)	20.7	---
Seattle	55.6 (1)(3)	26.0	---	33.3

(1) African Americans significantly different from Whites.
(2) African Americans significantly different from Hispanics.
(3) African Americans significantly different from Asian Americans.
(4) Whites significantly different from Hispanics

CONTROLLING FOR SELF-REPORTED OFFENDING

There are a variety of reasons why minority youth, especially African American youth, disproportionately come into contact with the juvenile justice system. One obvious potential explanation is that more of them commit offenses or that together they commit a greater number of total offenses. Unfortunately, there have been very few studies that have examined this possibility, primarily because prior studies of decision-making are rarely able to collect self-reported offending data from the research participants. The three studies used in these analyses have extensive self-report offending information, however.

In the previous section we saw relatively large race/ethnicity effects in predicting official contact/referral. However, if we focus on the level of self-reported offending, race/ethnic effects are less dramatic and less consistently significant. That is, African American youth and Hispanic youth have somewhat higher prevalence rates of self-reported delinquency than Whites, but the differences are not nearly as large as when official data are used. Details of race/ethnic differences in delinquency can be found in Table 5 and in the individual site reports in the Appendices.

In Table 5, both the prevalence of offending (proportion of persons who are offenders) and the frequency of offending (mean number of offenses per person – Pittsburgh, Seattle; or total number of offenses committed by all persons – Rochester) are listed. In addition, the prevalence and frequency of contact/referral, and the percent of offenders (those who commit one or more offenses) who are contacted/referred are given. As can be seen in Table 5, at all three sites and for most types of offenses, African Americans have somewhat higher prevalence rates of delinquent behavior than Whites[3], but their contact/referral rates far exceed those of Whites. For example, for the Total set of offenses common across sites, the African American prevalence rate of delinquent behavior ranges from 1.1 to 1.5 times that of Whites across sites, but the contact/referral rate is 1.5 to 3.4 times that of Whites. Additionally, expressed in another way, in Pittsburgh, 38.1% of White offenders (individuals who committed an offense), were apprehended and referred to court, but 66.3% of African American offenders were apprehended and referred to court. In Rochester, 19.2% of White offenders and 51.3% of African American

[3] Exceptions are the lower rate for property and total offense measures for the oldest sample in Pittsburgh.

offenders were contacted/arrested, and, in Seattle, 33.2% of White offenders were apprehended and referred to court, while 64.4% of African American offenders were apprehended and referred to court.

Similar findings hold for violent and property offenses. For violent offenses, African Americans are 1.1 to 1.5 times more likely to report involvement in violent offenses but are 2 to almost 5 times more likely to be contacted/referred than Whites, depending on the site. Also, African American violent offenders are roughly 2-5 times more likely to be apprehended/referred to court. For property offenses, African Americans are 1.1-1.4 times more likely to report involvement in violent offenses (except for the oldest cohort in Pittsburgh) but are roughly 1.4 to 3 times more likely to be contacted/referred than Whites, depending on the site; and African American property offenders are roughly 1.4 to 2 times more likely to be apprehended/referred to court.

Perhaps the most striking finding is observed for drug offenses. For the youngest sample in Pittsburgh, the African American to White prevalence ratio indicates that African Americans are 1.3 times more likely to be involved in a drug offense, but the ratio for court referral rates indicates that African Americans are 3.7 times more likely to be referred to court. Or, in terms of offenders, 10.6% of White offenders are apprehended and referred but 30.8% of African American offenders are apprehended and referred. Similar findings hold for the older Pittsburgh sample. For example, in terms of offenders in this sample, 8.7% of White offenders are apprehended and referred but 41.5% of African American offenders are apprehended and referred, indicating an almost 5 times greater rate of referral for African Americans. Similarly in Seattle, African Americans are 1.2 times as likely to report engaging in a drug offense but are 16.7 times more likely to be apprehended and referred to court. Similarly for offenders, 2.8% of White drug offenders are apprehended and referred to court, but 37.8% of African American offenders are apprehended and referred, indicating that African American drug offenders are more than 13 times more likely to be apprehended and referred.

Thus, quite clearly, on either a per person or per offender basis, at all three sites, African Americans have a substantially higher probability of being contacted/referred than do Whites, although there are substantial site differences. For Hispanics in Rochester and Asian Americans

in Seattle, the effects of race are not as evident or consistent. In Rochester, although for Hispanics the prevalence rate of contact/arrest is significantly higher for property and total delinquency measures, differences in the percent of offenders with a contact/arrest are not statistically significant between Whites and Hispanics for any of the three measures considered (violent, property, or total measures of offending). In Seattle, although Asian Americans consistently have lower prevalence rates of offending, disproportionate referral to court among Asian Americans is observed for property and total measures of delinquency. For each of these types of delinquency, Asian American offenders have about twice the chance as White offenders of being referred (39.6% for Whites to 80.6% for Asians for property offenses, and 33.2% for Whites to 59.8% for Asians for the set of total offenses).

Table 5. Prevalence and Frequency of Offending and Official Contact/Referral By Race and Ethnicity

Pittsburgh									
	Youngest Sample					Oldest Sample			
Prevalence	White	Black	Ratio: Black/White			White	Black	Ratio: Black/White	
Violent Offenses									
Prevalence of Offending (%)	54.3	72.3	1.3	***		57.6	61.2	1.1	ns
Prevalence of Court Referral (%)	14.9	34.6	2.3	***		13.1	26.5	2.0	**
Percent of Offenders Referred to Court	27.4%	47.9%	1.7	***		22.7%	43.3%	1.9	***
Property Offenses									
Prevalence of Offending (%)	49.7	55.0	1.1	ns		57.6	54.3	0.9	ns
Prevalence of Court Referral (%)	20.2	38.3	1.9	***		27.6	37.7	1.4	*
Percent of Offenders Referred to Court	40.6%	69.6%	1.7	***		47.9%	69.4%	1.4	***
Drug Offense									
Prevalence of Offending (%)	45.2	58.2	1.3	**		33.5	36.4	1.1	ns
Prevalence of Court Referral (%)	4.8	17.9	3.7	***		2.9	15.1	5.2	***
Percent of Offenders Referred to Court	10.6%	30.8%	2.9	***		8.7%	41.5%	4.8	***
Total Common Offenses									
Prevalence of Offending (%)	74.1	83.5	1.1	*		81.6	75.2	0.9	ns
Prevalence of Court Referral (%)	28.2	55.4	2.0	***		33.7	51.2	1.5	***
Percent of Offenders Referred to Court	38.1%	66.3%	1.7	***		41.3%	68.1%	1.6	***
Frequency	White	Black	Ratio: Black/White			White	Black	Ratio: Black/White	
Violent Offenses									
Mean Number of Offenses	25.04	23.01	0.9	ns		14.26	15.9	1.1	ns
Mean Number of Court Referrals	2.68	2.36	0.9	ns		1.82	2.71	1.5	*
Probability of Referral per Offense	10.7%	10.3%	1.0	ns		12.8%	17.0%	1.3	***
Property Offenses									
Mean Number of Offenses	57.12	41.96	0.7	ns		45.95	42.6	0.9	ns
Mean Number of Court Referrals	7.34	4.29	0.6	ns		7.36	6.62	0.9	ns
Probability of Referral per Offense	12.9%	10.2%	0.8	***		16.0%	15.5%	1.0	ns
Drug Offense									
Mean Number of Offenses	278.7	346.7	1.2	ns		128.58	288.41	2.2	*
Mean Number of Court Referrals	1.52	2.18	1.4	*		1.59	1.89	1.2	ns
Probability of Referral per Offense	0.5%	0.6%	1.2	***		1.2%	0.7%	0.5	***
Total Common Offenses									
Mean Number of Offenses	275.95	333.32	1.2	ns		156.91	228.04	1.5	ns
Mean Number of Court Referrals	7.06	5.56	0.8	ns		7.53	7.89	1.0	ns
Probability of Referral per Offense	2.6%	1.7%	0.7	***		4.8%	3.5%	0.7	***
* p ≤.05, ** p ≤ .01 *** p ≤ .001									

Table 5 (Continued)

Rochester							
Prevalence	White	Black	Hispanic	Ratio: Black/White		Ratio: Hispanic/White	
Violent Offenses							
Prevalence of Offending	45.8	67.2	59.7	1.5	***	1.3	**
Prevalence of Police Contact/Arrest	3.6	17.1	4.9	4.8	***	1.4	ns
Percent of Offenders with Contact/Arrest	7.9%	25.4%	8.2%	3.2	***	1.0	ns
Property Offenses							
Prevalence of Offending	30.5	43.5	54.3	1.4	**	1.8	***
Prevalence of Police Contact/Arrest	9.2	28.6	17.2	3.1	***	1.9	*
Percent of Offenders with Contact/Arrest	30.2%	65.7%	31.7%	2.2	***	1.1	ns
Total Common Offenses							
Prevalence of Offending	60.0	75.4	74.6	1.3	***	1.2	**
Prevalence of Police Contact/Arrest	11.5	38.7	20.7	3.4	***	1.8	*
Probability of Police Contact/Arrest per Offender	19.2%	51.3%	27.7%	2.7	***	1.4	ns
Frequency	White	Black	Hispanic	Ratio: Black/White		Ratio: Hispanic/White	
Violent Offenses							
Number of Offenses	733	3486	731	4.8		1.0	
Number of Contacts/Arrests	7	95	6	13.6		0.9	
Probability of Police Contact/Arrest per Offense	1.0%	2.7%	0.8%	2.9	***	0.9	ns
Property Offenses							
Number of Offenses	924	1918	987	2.1		1.1	
Number of Contacts/Arrests	21	208	36	9.9		1.7	
Probability of Police Contact/Arrest per Offense	2.3%	10.8%	3.6%	4.8	***	1.6	ns
Total Common Offenses							
Number of Offenses	5161	14705	4397	2.8		0.9	
Number of Contacts/Arrests	31	321	50	10.4		1.6	
Probability of Police Contact/Arrest per Offense	0.6%	2.2%	1.1%	3.6	***	1.9	**
* p ≤.05, ** p ≤ .01 *** p ≤ .001							

Table 5 (Continued)

Seattle							
Prevalence	White	Black	Asian	Ratio: Black/White		Ratio: Asian/White	
Violent Offenses							
Prevalence of Offending	52.3	74.1	38.1	1.4	*	0.7	*
Prevalence of Court Referrals	8.7	37.2	9.0	4.3	*	1.0	ns
Percent of Offenders with a Court Referral	16.6%	50.2%	23.6%	3.0	***	1.4	ns
Property Offenses							
Prevalence of Offending	58.4	61.9	39.2	1.1	ns	0.7	*
Prevalence of Court Referrals	23.1	47.3	31.6	2.0	*	1.4	*
Percent of Offenders with a Court Referral	39.6%	76.4%	80.6%	1.9	***	2.0	***
Drug Offense							
Prevalence of Offending	46.7	57.4	18.8	1.2	*	0.4	*
Prevalence of Court Referrals	1.3	21.7	0.6	16.7	*	0.5	ns
Percent of Offenders with a Court Referral	2.8%	37.8%	3.2%	13.6	***	1.1	ns
Total Common Offenses							
Prevalence of Offending	78.4	86.3	55.7	1.1	*	0.7	*
Prevalence of Court Referrals	26	55.6	33.3	2.1	*	1.3	+
Percent of Offenders with a Court Referral	33.2%	64.4%	59.8%	1.9	***	1.8	***
Frequency	White	Black	Asian	Ratio: Black/White		Ratio: Asian/White	
Violent Offenses							
Mean Number of Offenses Among Violent Offenders	14.3	20.3	7.7	1.4	ns	0.5	ns
Mean Number of Court Referrals Among Violent Offenders	0.26	1.36	0.30	5.2	*	1.2	ns
Percent of Offenses resulting in Court Referral	1.8%	6.7%	3.9%	3.7	***	2.1	***
Property Offenses							
Mean Number of Offenses Among Property Offenders	38.7	23.9	22.7	0.6	ns	0.6	ns
Mean Number of Court Referrals Among Offenders	0.93	2.84	1.19	3.1	*	1.3	ns
Percent of Offenses resulting in Court Referral	2.4%	11.9%	5.2%	4.9	***	2.2	***
Drug Offense							
Mean Number of Offenses Among Drug Offenders	107.1	254.1	43.2	2.4	*	0.4	*
Mean Number of Court Referrals Among Drug Offenders	0.04	0.81	0.03	20.3	*	0.8	ns
Percent of Offenses resulting in Court Referral	0.0%	0.3%	0.1%	8.5	***	1.9	***
Total Common Offenses							
Mean Number of Offenses Among Offenders	102.1	203.4	35.8	2.0	ns	0.4	ns
Mean Number of Court Referrals Among Offenders	0.9	4.0	1.1	4.2	*	1.2	ns
Percent of Offenses resulting in Court Referral	0.9%	2.0%	3.1%	2.1	***	3.4	***
* $p \leq .05$, + $p \leq .10$							

Because different individual offenders may commit different numbers of offenses, it is also useful to examine differences in the total frequency of offending and contact/referral among racial groups. That is, conceivably, even if the number of offenders were the same in different groups of individuals, one group may commit substantially more offenses than another and as a result have a higher rate of contact/referral. For this reason, the frequency (or incident) rates of offending and contact referral are also provided in Table 5[4]. In Rochester and Seattle the results from these frequency analyses are similar to those from the examination of prevalence. In comparison to Whites, African Americans have a substantially and statistically significant greater chance per offense of being contacted/referred for all types of offenses. In Rochester, Hispanics have a higher rate of contact/arrest per offense for the total set of offenses considered, although differences for violent and property offenses are not significant. In Seattle, Asian Americans have significantly higher rates of per offense referral in comparison to Whites for all types of offenses.

In Pittsburgh, the findings are mixed by sample and type of delinquency. For African Americans in the youngest sample in Pittsburgh, the per offense rate of apprehension and referral is lower for property offenses and for the total set of offenses in comparison to Whites. However, although significant, the rates for drug offenses are similar and the difference for violent offenses is not significant. In the oldest Pittsburgh sample, the per offense rate of apprehension and referral is higher and significant for violent offenses, but lower and significant for drug offenses and the set of total offenses, and is not significant for property offenses.

Combining these findings about per offense rates of contact/referral across sites suggests evidence of disproportionate minority referral in two of the sites, but mixed findings in the other site with minorities in some cases having lower rates of referral than whites.

[4] It should be noted that in these analyses the total number of offenses for a specific group can be fairly large resulting in excessive statistical power. This can result in even very small differences between groups being statistically significant.

Although these findings of prevalence (person based) and frequency (incidence based) comparisons among racial groups are indicative of disproportionate contact/referral, the more central question is what happens to the impact of race/ethnicity on contact/referral within the juvenile justice system once self-reported offending is held constant in a multivariate analysis. The results for total common offenses are presented in Table 6.

The top panel presents the baseline model when only race/ethnicity is included as a predictor of official contact with the juvenile justice system. Consistent with the previous section, there are robust effects. In all four comparisons, African American youth have a significantly higher odds ratio than White youth, indicating greater contact with the system. In Rochester, Hispanic youth are significantly more likely to come into contact with the system than White youth but there is no significant difference between Asian American and White youth in Seattle.

The second panel of Table 6 (Control Model I) introduces self-reported offending into the picture. Generally speaking, self-reported offending itself is strongly related to official contact. The central question, though, is whether the odds ratios associated with race/ethnicity are substantially reduced, as compared to those on the top panel? The answer is no. By and large the odds ratios are of the same magnitude. With one exception, (Asian American vs. Whites in Seattle), they all decline or are quite similar, and the declines are quite modest. For example, the average odds ratio for African Americans across the four equations in the baseline model is 3.45 and in the models controlling for self-reported offending the average is 3.2. The only evidence of a reduction in the race/ethnic effect comes in Rochester for the Hispanic youth; the odds ratio declines from 2.1 ($p<.02$) to 1.8 ($p<.08$). In Seattle there appears to be a suppression effect for Asian American youth as the odds ratio increases from 1.1 (ns) to 2.0 ($p<.05$).

Table 6

Total Offenses
Odds Ratios Predicting Official Contact/Arrest/Referral
Controlling for Self-Reported Offending -- Males Only

	Pittsburgh		Rochester	Seattle
	Youngest	Oldest		
Baseline Model:				
African American	3.2***	2.2***	5.0***	3.4***
Hispanic	---	---	2.1*	---
Asian American	---	---	---	1.1 ns
Control Model I:				
African American	3.0***	2.4***	4.4***	3.0***
Hispanic	---	---	1.8†	---
Asian American	---	---	---	2.0*
Self-Reported Offending	7.8***	2.9***	4.4***	2.5***
Control Model II:				
African American	1.7*	1.4 ns	3.8***	1.9*
Hispanic	---	---	1.6 ns	---
Asian American	---	---	---	1.1 ns
Self-Reported Offending	7.3***	2.8***	2.7***	2.0***
Risk Factor Index	1.2***	1.3***	1.1†	1.2***

† p≤.10, * p≤.05; ** p≤.01; ***p≤.001

The studies also examined this issue by offense type with the same results (see Tables 7 and 8 and tables in the Appendices). For violent offenses the odds ratios for African American youth drop but only very slightly and all remain significant. In Rochester, the difference between Hispanic and White youth is not significant in either equation and in Seattle we again see a modest suppressor effect for Asian American youth. The same pattern is observed for property offenses.

The Pittsburgh Youth Study also examined weapon offenses and drug offenses and found no evidence that self-reported offending explained the racial disparities in contact with the juvenile justice system. African American youth still had higher contact rates. The Seattle Social

Development Project examined drug possession and drug sales and also found no evidence that controlling for self-reported offending substantially altered the results of the baseline models.

Given the concern about temporal ordering because of the multiple year periods used in these analyses, observed earlier in this report, it should be noted that to the extent that arrest/contact leads to increases in delinquent behavior, the relationship between self-report offending and arrest/contact could be misleading. However, given that the influence of the self-report measure is very small at all three sites, the temporal ordering issue does not seem particularly salient and does not appear to influence the findings.

Table 7

Violent Offenses
Odds Ratios Predicting Official Contact/Arrest/Referral
Controlling for Self-Reported Offending -- Males Only

	Pittsburgh		Rochester	Seattle
	Youngest	Oldest		
Baseline Model:				
African American	2.7***	2.4***	5.8***	6.4**
Hispanic	---	---	1.5 ns	---
Asian American	---	---	---	1.3 ns
Control Model I:				
African American	2.4***	2.4***	4.4***	4.9***
Hispanic	---	---	1.2 ns	---
Asian American	---	---	---	2.3*
Self-Reported Offending	5.0***	1.9**	4.6***	2.6***
Control Model II:				
African American	1.4 ns	1.8†	3.9**	3.0***
Hispanic	---	---	1.0 ns	---
Asian American	---	---	---	2.1*
Self-Reported Offending	4.9***	1.8***	4.2***	2.0***
Risk Factor Index	1.2***	1.1**	1.1 ns	1.3***

† $p \leq .10$, * $p \leq .05$; ** $p \leq .01$; ***$p \leq .001$

Table 8

Property Offenses
Odds Ratios Predicting Official Contact/Arrest/Referral
Controlling Self-Reported Offending -- Males Only

	Pittsburgh		Rochester	Seattle
	Youngest	Oldest		
Baseline Model:				
African American	2.4***	1.7*	4.5***	2.9***
Hispanic	---	---	2.2**	---
Asian American	---	---	---	1.2 ns
Control Model I:				
African American	2.4***	1.8**	3.6***	3.0***
Hispanic	---	---	1.6 ns	---
Asian American	---	---	---	1.8*
Self-Reported Offending	3.4***	4.3***	2.7***	2.4***
Control Model II:				
African American	1.5 ns	0.9 ns	3.2***	1.9*
Hispanic	---	---	1.5 ns	---
Asian American	---	---	---	1.8†
Self-Reported Offending	3.1***	4.1***	2.5***	2.0***
Risk Factor Index	1.2***	1.3***	1.1 ns	1.2***

† p≤.10, * p≤.05; ** p≤.01; ***p≤.001

Summary

Overall, the weight of the evidence in this section is clear. On a per person or per offender basis, African Americans have a substantially higher probability of being contacted/referred than do Whites. For Hispanics in Rochester and Asians in Seattle, the effects of minority status are not as consistent or evident. Similarly, on a per offense (or incident) basis, in two of the sites (Rochester and Seattle) African Americans have a substantially higher rate of contact/referral than do Whites, although in the third site (Pittsburgh) the findings are mixed. Per offense findings in Seattle also indicate significantly higher rates for Asian Americans than Whites for all types of offenses, and per offense findings in Rochester indicate significantly higher rates for Hispanics than Whites for all types of offenses.

In formal statistical models, controlling for the impact of self-reported offending does not in any fundamental way alter the disproportionate nature of DMC described in the previous section. For total common offenses and various offense types, and across the three cities studied, African American youth have higher contact/referral prevalence rates than White youth even when self-reports are held constant. The odds ratios do decline, but only very slightly when race is included in the models, and all remain statistically significant. There is some evidence of decline for Hispanic youth in Rochester, but in this comparison the main effect is itself rather modest. In Seattle, Asian American youth appear somewhat more likely to be referred within the juvenile justice system than Whites once self-reported offending is statistically controlled. Thus, self-reported offending, a generally understudied topic, does not explain the differential rates of contact with the juvenile justice system by race/ethnicity.

CONTROLLING FOR BOTH SELF-REPORTED OFFENDING AND RISK FACTORS

The previous section indicated that controlling for self-reported delinquency only very modestly reduced the effect of race/ethnicity as a predictor of contact/referral. That is, the explanation of DMC at the contact/referral level was not a result of differences in involvement in delinquent behavior. In this section we examine the influence of other risk factors as another possible explanation of the disproportionate rates of contact/referral among minorities, after controlling for level of delinquent involvement. Various risk factors are related to the chance of being arrested, as indicated in Table 4. Recall from the description of measures that a risk index, indicating the number of risk factors facing an individual was calculated at each site. The third panel of Table 6 (Control Model II) displays, for the total offense measure, the odds ratios of contact/referral (in comparison to Whites) when race, self-reported offending, and the risk index are all included in a logistic regression model.

As can be seen in Table 6, for the total set of delinquent offenses, even when controlling for delinquent involvement, the risk index has a significant effect on the chance of being contacted/referred. However, more importantly for the purposes here, with one exception, the addition of the risk index to delinquent involvement as a predictor of contact/referral substantially reduces the effect of race/ethnicity, but it clearly does not eliminate it. The one exception to this rule is the oldest cohort sub-sample in Pittsburgh, where the race/ethnic effect, although in the expected direction, has been reduced to non-significance. Thus, it appears that, quite generally for total delinquency, the combination of delinquent involvement and risk does not completely explain the observed disproportionate minority contact. The reduction in the magnitude of the race/ethnic effect is not trivial, however. In the youngest sample in Pittsburgh the coefficient for African American youth drops from 3.2 (Baseline Model) to 1.7 (Control Model II); comparable figures for Rochester are from 5.0 to 3.8, and for Seattle they are 3.4 to 1.9.

The effect of race/ethnicity, self-reported violent offending, and risk index on the probability of being contacted/referred for violent offenses is provided in Table 7 and similar information for property offenses is given in Table 8. For violent offenses, as might be expected given the earlier

finding about total offending, both race/ethnicity and self-reported offending are clearly related to contact/referral, with the effect of race generally being diminished slightly when offending is taken into account. For violent offenses, the risk index is significant at both Pittsburgh and Seattle, but not in Rochester. The effect of race/ethnicity when delinquency and risk are jointly being controlled varies by site. In Pittsburgh, the race effect becomes either non-significant or only marginally significant for the youngest and oldest cohorts, respectively. However, in Rochester and Seattle, race/ethnicity remains a highly significant predictor of contact/referral when both delinquency and risk are controlled.

For property offenses (Table 8), as with total and violent offenses, race/ethnicity and self-reported property offenses are predictive of contact/referral, and the effect of race/ethnicity is reduced only slightly when self-reported property offending is controlled. However, as with violent offenses, there are site differences in the significance of risk and in the significance of race/ethnicity when both offending and risk are controlled. In Rochester, risk is not a significant predictor of contact/referral. In all three cities, however, the odds ratios for race decline in size rather substantially from the baseline to the final model. In Pittsburgh, the effect of race/ethnicity is reduced to non-significance, but in Rochester and Seattle race/ethnicity remains a significant predictor of contact/referral, albeit of reduced magnitude, when both offending and risks are controlled.

Summary

In considering the findings about the effect of race/ethnicity on contact/referral when both self-report offending and other risks for arrest are controlled, it first should be noted that there are some site differences. This, perhaps, should be expected. Sites vary in their demographic characteristics, their physical environments, their social and political environments, in the standard operating procedures of police, and in the nature of local offending patterns. Quite conceivably, the impact of minority status on contact/referral may be site specific. Given this, what is particularly impressive is that there is some consistency of findings across sites. When race/ethnicity, offending, and risk are all included in a regression model predicting contact/referral, at all sites, offending is a highly significant predictor of contact/referral. And

this applies to the consideration of total offenses, violent offenses, and property offenses. For these three sets of offenses, risk is a significant predictor of contact/referral at Pittsburgh and Seattle, but is either non-significant or only marginally significant at Rochester.

Findings concerning the effect of race/ethnicity when both offending and risk are controlled also vary by site. In Rochester and Seattle, for the sets of offenses included in the total, violent, and property categories, race/ethnicity remains a significant predictor of contact/referral when offending and risk are controlled. However, for all three delinquency measures, the magnitude of the race effect is diminished. On the other hand, in Pittsburgh significance is found for only one cohort for the set of total offenses after offending and risk are controlled, and is either non-significant or marginally significant for violent and property offenses. Thus, the weight of the evidence suggests, that in general, the effect of race/ethnicity on the chance of being contacted/referred is reduced but remains significant when both offending and risk are controlled. However, at one site (that may presumably generalize to some other sites) the effect of race/ethnicity is reduced to non- or marginal significance when offending and risks are taken into account. That is, in general, DMC is not totally explained by the level of offending among racial/ethnic groups and the presence of risk factors, although this may vary by site.

CONCLUSION

This report uses information from three community studies of delinquency to examine disproportionate minority contact (DMC) and factors that might affect DMC at the contact/court referral level. These studies were not designed to study DMC issues and as such have some limitations in the kinds of issues that can be examined. For example, given the sampling strategies of these projects, the sample sizes needed to examine court disposition or incarceration is not adequate at some sites, and for this reason the report is restricted to examination of DMC at the point of police contact or court referral. On the other hand, these studies provide the relatively unique ability to examine two often given reasons for DMC -- offending behavior and the greater presence of risk factors for contact/referral among minorities.

Three main conclusions seem warranted based on the findings presented in this report.

1. There is clear evidence that a greater proportion of minorities are contacted/referred, although in Seattle the rate of referral was similar for Whites and Asians.
2. DMC can not be explained by differences in the offending behavior of different racial groups. Although self-reported offending is a significant predictor of which individuals are contacted/referred, levels of delinquent offending have only marginal effects on the level of DMC. This was found for offenses included in a total measure of delinquency and for both violent and property offenses. The often stated reason for DMC – that it simply reflects the difference in offending rates among different racial/ethnic groups – can not be supported by the information provided by these three studies, and we suspect that it is simply incorrect in general.
3. The effect on DMC of including a number of additional risk factors results in mixed findings. The weight of the evidence suggests that, in general, the effect of race/ethnicity on the chance of being contacted/referred is reduced but remains significant when both offending and additional risks are controlled. However, there are substantial site differences. At one site (Seattle), risk substantially reduced the effect of DMC but did not eliminate it. At another site (Pittsburgh) risk reduced the effect of DMC to non- or marginal significance. At the third site (Rochester), the risk factors were either not significant or only marginally significant predictors of arrest when race and delinquency were controlled, and the inclusion of risk had only a small effect on DMC.

Thus, in general, it appears that DMC at the contact/referral level cannot be fully explained by level of involvement in delinquency nor by delinquency level and risk factors combined (although the strength of this finding may vary by site). This finding is consistent with the findings from the only two studies we located that examined self-report delinquency and subsequent JJS processing: Fergusson et al. (2003) who examined race effects, levels of self-report offending, other control factors, and convictions; and Huizinga and Elliott (1987) who examined self-report offending and arrest, with observations about incarceration[5]. They are also in general accord with studies that have examined various risk and control factors (although not including self-report delinquency) described in the literature review.

Does this observation about DMC at the arrest/referral point of juvenile justice processing imply there is racial bias in the juvenile justice system? The answer is not necessarily. It is correct to say that if there is bias in the juvenile justice system then the kinds of findings reported here would be expected. However, the reverse statement is not necessarily correct; that is, findings of disproportionality cannot be used to conclude that there is racial bias in the system. Other factors not measured in these studies may affect the decision to arrest/refer and are not controlled in the analyses conducted for this report and may affect the level of observed DMC. Among these are the availability and capability of a parent or guardian to take custody of and provide supervision for the youth; prior arrests of the youth or of family members; the presence and willingness of a victim to press charges; the crime rate and characteristics of the neighborhood (including police patrol practices) in which the offense occurs or in which the offender lives; as well as other factors potentially related to DMC. Any or a combination of these factors may affect decisions to arrest or refer a particular youth and examination of these factors would thus help our understanding of factors underlying DMC. Thus, a conclusion of bias on the basis of findings reported here would not be appropriate. However, importantly, two of the more common reasons given for DMC, different levels of offending behavior and the presence of selected risk factors, were shown not to fully explain the observed DMC. Examination of other, perhaps more subtle factors, including more direct measurement of bias, seem needed to more fully understand the origins of DMC.

[5] This study did not find evidence in a national sample of racial differences in self-report delinquency or in arrest rates by either general delinquency or by type of offense about 25 years ago, indicating that self-report offending could not explain the differences in incarceration rates between whites and minorities observed at that time.

The findings of this report also suggest some further directions for additional research to more fully understand DMC at the initial contact/arrest/referral stage. First, the need for DMC studies in multiple sites is clearly indicated. Findings can be site specific so that findings from one site may not generalize to other sites. Thus, care is needed in identifying the factors at a particular site that contribute to DMC. For example, in the current study, the selected risk factors considered did not remove the race effect on arrest in two sites (when race and delinquency were included in a model) but did (with but one exception) remove the effect in the other site. In addition, there were factors that provided risk at some sites but not at others. There may also be urban vs. rural differences or effects of population density (see DeJong et al. in literature review) and differences in local options for police at time of contact (such as police diversion programs or transfer to local agencies) as well as factors occurring later in the justice system that may influence contact/arrest/referral decisions. Overall, these comments suggest that individual communities may need to develop the information capacities to permit local examination and identification of the factors that lead to DMC in their community, and not rely on findings from other communities – although studies in other communities would provide guidance. In addition, it would be helpful if community studies were not based on select or targeted samples, such as high-risk neighborhoods or individuals, but require community-wide knowledge, since otherwise factors influencing DMC may be missed or misunderstood (see footnote 2).

Second, disentangling the effects of race, social class, and neighborhood on arrest/referral is difficult, given the overlap of these individual and family characteristics and environments. However, this is a critical issue and studies designed to address these issues are needed. In the current study, race, social class, and neighborhood were each highly significant predictors of contact/referral at all three sites, suggesting their importance. These factors are also likely to be correlated with additional factors that may impact DMC.

Third, the finding that DMC exists even after delinquency and a selection of risk factors were controlled, suggests that identification of additional factors that influence DMC, at least at some sites, is needed. Obvious among these are police decision making, including the nature of the

offense charged, and the factors that influence such decision making (perceived public danger, availability of capable guardians, prior contact with offender, offender demeanor at time of contact, etc.), and factors influencing the likelihood of initial discovery and apprehension such as calls for service (911 calls) and patrol patterns, and additional individual characteristics.

As the above comments suggest, additional information is needed to more fully understand DMC at the police contact, arrest, court referral stage. However, this report does indicate that DMC can not be explained by differences in the offending behavior of different racial groups and that, in general, DMC is substantially reduced, but not eliminated, by consideration of a select set of additional risk factors.

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