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Editor's Note

As this third issue of *JOJJ* is going online in mid-November, it would be remiss to ignore the plight of thousands of children in New York and New Jersey who have been displaced from their homes and schools for more than 2 weeks as a result of Hurricane Sandy. An enormous coordinated effort is currently under way to provide assistance to these children and their families. Various organizations are working with local, state, and Federal entities and many other service providers to restore order out of the chaos inflicted by Mother Nature. In many instances, this means helping with basic subsistence to these children and their families.

As practitioners, teachers, clinicians, and policymakers in the juvenile justice arena, we are well aware of the need for such coordinated efforts for children. We know how thinking outside of the box can lead to effective prevention and intervention programs. The third issue of *JOJJ* highlights several programs that use new and coordinated responses for system-involved youth, such as home-based interventions in Utah, family-centered treatment in Maryland, and a peer support program for families in Washington State. This issue also includes articles that address the impact of race on preadjudication detention, and the characteristics of incarcerated youth who have some history of being homeless.

We want your feedback on these articles, and we hope you will consider *JOJJ* as an outlet for your research. We accept journal submissions on a rolling deadline basis and are currently accepting manuscripts for our fifth issue, which will be published in the fall of 2013. We look forward to hearing from you.

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Editor in Chief, *JOJJ*

Characteristics of Incarcerated Youth Reporting Homelessness

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Abstract

Adolescence is a time when relationships generally shift from being family-oriented to being peer-oriented. Events such as running away, being homeless, or being incarcerated have the potential to disrupt social and developmental trajectories and impact social development. This study examines characteristics of incarcerated youth who reported having ever lived on the streets or being homeless. The group potentially represents one of the highest risk groups of adolescents in our communities. The sample comprises 884 incarcerated females (21.9%) and 3,146 incarcerated males (78.1%) who participated in an anonymous study of risk and protective factors while in juvenile detention in Ohio. The study examines risk in the domains of problems with alcohol/drug use and alcohol/drug treatment history, mental/physical health problems and treatment history for each, sexual behavior, anger management and physical violence, and family support. Results indicate that family, peer, and school problems each have significant positive associations with having been homeless at some point. Homeless youth engage in risky behaviors, including selling drugs, theft, working in the sex trade, and panhandling. As a result, these youth have high rates of arrests. This study points to the importance of screening for homelessness on intake into correctional settings and the importance of discharge planning.

Introduction

Adolescence is a time when relationships generally shift from being family-oriented to being peer-oriented. Events such as running away, being homeless, or being incarcerated have the potential to disrupt social and developmental trajectories and profoundly impact social development (Johnson, Whitbeck, & Hoyt, 2005). The experience of being incarcerated causes an adolescent's ties to school and friends to be weakened or severed, and the additional experience of homelessness has the potential impact of establishing an adolescent's ties to street culture. This study examines the characteristics of incarcerated youth who report having ever lived on the streets or being homeless. This group potentially represents one of the highest risk groups of adolescents in our communities.

Studies have examined predictors of homelessness among youth. In a longitudinal population-based study of factors in adolescence predicting homelessness in young adulthood, those that predicted homelessness include poor quality

of family relationships, school adjustment problems, and the experience of victimization (van den Bree et al., 2009). Lack of peer support, depression, and substance abuse have predicted trauma-related anger among runaway youth (McCarthy & Thompson, 2010). These studies suggest that effective prevention services target the entire family unit, develop greater cohesion and support within the family, and involve the school and social service agencies.

A recurring theme in the literature related to youth homelessness is the association between homelessness and victimization. Running away at an early age, running away more often, sleeping on the street, panhandling, deviant peer associations, and not having a family member in one's network are associated with increased physical victimization of homeless young adults. Being female, gay, lesbian or bisexual, having an unkempt physical appearance, panhandling, and having friends who trade sex are associated with increased sexual victimization (Tyler & Beal, 2010). Greater transience, alcohol addiction, mania, and lower self-efficacy have predicted post-traumatic stress disorder among homeless youth, whereas trauma has been associated with alcohol addiction (Bender, Ferguson, Thompson, Komlo, & Pollio, 2010). Intimate partner violence among homeless youth has barely been studied. Slesnick, Erdem, Collins, Patton, & Buettner (2010) found that 30%–35% of homeless youth report intimate partner violence, and that women and those with a history of childhood abuse were more likely to report being victimized by their intimate partners. According to Slesnick and colleagues (2010), youth who reported being victims of abuse in childhood were more than twice as likely to experience verbal abuse and physical violence in their relationships.

Delinquent, "throwaway" youth are those who have been forced to leave their parental homes without alternative care arranged and are prevented from returning home. Throwaway youth have higher rates of delinquency than the general population and appear to have individual and relationship strains that impact delinquency (Montgomery, Thompson, & Barczyk, 2011).

Homeless youth who use drugs are more likely than those who do not to come into contact with the criminal justice system. Drug use is associated with depression among street youth. Youth who use heroin and crystal meth have the highest depression scores, followed by those who use cocaine and crack and, finally, those who use marijuana (Hadland et al., 2011). Dashora, Erdem, and Slesnick (2011) have looked at the coping strategies of homeless substance abusing youth. These researchers found that higher use of emotion-oriented coping predicted higher rates of delinquency, whereas higher task-oriented coping predicted lower rates of delinquency.

Milburn and colleagues (2009a) have conceptualized three distinct clusters of homeless youth: those who are protected and doing relatively well (i.e., they have a greater number of protective factors than risk factors), those who are at risk, and those who are at risk and doing relatively poorly (i.e., they have a greater number of risk factors than protective factors). Milburn and colleagues (2009b) found that more than one-half (52%) of the newly homeless youth fall into the protected cluster, implying that the timing of intervention is a critical element in preventing chronic homelessness. Over time, homeless youth are initiated into the street economy (Gwadz et al., 2009). They have no address, no ability to look presentable on a daily basis, and lack job and life skills. The street economy allows them to gain income. One study found that for each additional year of homelessness among youth, there is an increase in unemployment, depression, and having friends who trade sex (Tyler, 2009).

Interventions for homeless youth must consider their social network. Social networks of homeless and runaway adolescents are considerably heterogeneous, comprising relationships from home

and the street, as well as family and non-related adults (Johnson et al., 2005). One study found that 96% of homeless youth report Internet use (Rice, Monro, Barman-Adhikari, & Young, 2010). Youth connected to family members online were less likely to exchange sex and more likely to report a recent HIV test than those who were not (Rice et al., 2010). Youth connected to street-based peers were more likely to exchange sex, whereas youth connected to home-based peers online were more likely to report a recent HIV test (Rice et al., 2010). Although the study concludes that homeless youth need more access to the Internet, the authors caution that this access could lead to youth soliciting sex online (Rice et al., 2010). Young and Rice (2011) found that online social networking and the topics discussed on these networks have the potential to either increase or decrease sexual risk-taking behavior, depending on how the networks are used. For homeless youth who are physically disconnected from positive peers, social networking technologies may facilitate the sorts of positive social ties that effective peer-based prevention programs require.

A framework for analyzing homelessness among youth is provided by the Risk Amplification and Abatement Model (RAAM) (Milburn et al., 2009b), an extension of the original Risk Amplification Model (RAM) (Paradise et al., 2001; Whitbeck & Hoyt, 1999). RAM suggests that most homeless adolescents come from disorganized families, filled with conflict, violence, and parental substance abuse. When adolescents run away or are thrown out, they enter street life and develop social networks of other adolescents with similar backgrounds, amplifying their risks for prostitution, drug abuse, theft, and the like. Milburn and colleagues (2009b) argue that this perspective focuses on negative outcomes, leading to little ability to explain why some homeless adolescents successfully emerge from street life to re-engage in the mainstream. Milburn and colleagues (2009b) developed the RAAM, which posits that negative contact with socializing agents amplifies risk. At the same time, positive contact with socializing agents abates risk for homeless adolescents, representing an ecological-developmental perspective of adolescent homelessness (Haber & Toro, 2004). The ecological-developmental perspective considers both negative events and resource deficiencies that amplify risk, and resources and positive events that reduce risk (Haber & Toro, 2004).

RAAM suggests that positive and negative contacts occur on four levels of social organization: the family, peers, social services, and formal institutions. Family-level negative variables, according to RAAM , include abuse, violence in the home, lack of support, family substance abuse, and sexual abuse (Milburn et al., 2009b). Family-level positive variables include contact with and support from family members. One study found that family interaction increases newly homeless youth's perception of positive bonds, therefore making it more likely that a newly homeless youth will return home (Milburn et al., 2009b).

Peer variables, according to RAAM, can be either negative or positive. Negative peer variables, according to this model, are exclusion from positive peer networks and peers who lead youth to other risky behavior. Positive peer variables include prosocial peers (peers in school or those who are working and not using drugs) who have a countervailing positive influence (Milburn et al., 2009b).

At the social services level, homeless shelters tend to reinforce the idea that homeless youth have limited resources, and shelters are not designed to integrate adolescents back into their communities of origin. Providing homeless youth with subsistence services may contribute to further separation from their families and communities. Homeless adolescents who actually use shelter services may be more cut off and less likely to return to familial housing than those who do not use these services. RAAM suggests that shelters that provide family conflict reduction and educational assistance create greater

positive odds that juveniles will return home than services that provide for subsistence alone.

At the formal institution level, RAAM suggests that continued engagement in school is positive. Adolescents who remain connected to school also keep connected to prosocial peers and have access to adult mentors (Milburn et al., 2009b).

Effective HIV prevention programs for homeless youth provide a safety net (see Arnold & Rotheram-Borus, 2009, for a comparison of prevention programs). Effective programs maintain contact over time and provide prolonged intensive support. Effective programs do not re-examine the past or assign blame. Arnold and Rotheram-Borus (2009) conclude that youth need "pathways out of homelessness."

Methods

Our sample comprised 884 incarcerated females (21.9%) and 3,146 incarcerated males (78.1%) who participated in an anonymous study of risk and protective factors while in juvenile detention in Ohio. These adolescents interacted anonymously with a "talking computer" that read a set of 100 "yes" or "no" questions related to risk and protective factors. The youth responded by pressing "Y" or "N" on the computer keyboard. Our instrument measured risk in the domains of problems with alcohol and drug use and alcohol/drug treatment history, mental and physical health problems and treatment history for each, sexual behavior, anger management and physical violence, and family support.

We measured social influences at four levels of organization: 1) family; 2) peers; 3) social services; and 4) formal institutions. We were able to include both positive and negative influences for the levels of the family and social services, but our measures for the levels of peers and formal institutions reflected only negative influences. Adolescents answered all questions with a "yes" (coded 1) or "no" (coded 0) response. These measures are described below. We measured our dependent variable, *homelessness*, by asking the single question, "Have you ever lived on the streets or in a shelter?" Responses were coded 0 for a "no" response and 1 for "yes."

We measured *family problems* by asking about four items: 1) whether there were arguments, threats of violence, or actual violence at home; 2) whether anyone at home caused embarrassment because of his or her drug or alcohol use; 3) whether the respondent stayed away from home for more than two nights because they were afraid to go home; and 4) whether the respondent had physical fights in the home in which someone was hurt. We measured *family support* by asking about three items: 1) whether the respondent's family was there to help him or her when something went wrong; 2) whether he or she could depend on his or her family; and 3) whether his or her family helped him or her to be the person he or she wants to be.

We measured *peer problems* by asking about the following two items: 1) whether the respondent had ever skipped school to get high with friends, and 2) whether the respondent's best friend drank or took drugs.

We measured *social services* influences by asking whether the respondent was receiving treatment or taking medication for a medical problem, and four questions asking about treatment for personal, family, school, emotional, and mental health problems.

We measured *formal institution* influences by asking questions about three items: 1) whether the student had experienced school failure; 2) whether the student had participated in special education classes; and 3) whether the respondent was currently out of school because he or she dropped out or was suspended or expelled.

We used contingency table analyses and multivariate logistic regression to examine the relationships among measures of the four risk/protective domains and the outcome of homelessness. We conducted all analyses using the PASW version 18 statistical package.

Results

We first looked at the unadjusted odds ratios for each of our independent variables and the single item measuring homelessness. Table 1 contains the unadjusted odds ratios and confidence intervals for each of the risk measures by domain and the variable of interest—homelessness.

Table 1. **Proportion Responding "Yes" and Unadjusted Odds Ratios for Individual Items and Reports of Homelessness**

		% Who have EVER lived on the street or in a shelter				
		No	Yes	Sig.	*OR*	95% CI for *OR*
Gender	Male (coded 0)	85.7%	14.3%	.000	1.465	1.206, 1.778
	Female (coded 1)	80.4%	19.6%			
Family						
Family Problems	Have you had arguments at home where you threaten to hurt each other?	12.6%	24.0%	.000	2.183	1.823, 2.614
	Have you had physical fights in your home where you hurt each other?	13.0%	24.2%	.000	2.134	1.771, 2.570
	Does anyone in your home drink or use drugs enough to embarrass or upset you?	13.2%	31.7%	.000	3.044	2.454, 3.776
	Have you ever stayed away from home for more than two nights because you didn't want your family to know about something or you were afraid to go home?	9.5%	34.9%	.000	5.096	4.256, 6.102
Family Support	When something goes wrong, is your family there to help you?	31.5%	12.4%	.000	0.307	.253, .374
	Can you depend on your family?	33.8%	12.5%	.000	0.279	.228, .342
	Does your family help you to be the person you want to be?	29.0%	11.4%	.000	0.314	.262, .377
Peers						
Peer Problems	Have you ever skipped classes or missed a whole day of school to drink or get high with friends?	11.4%	27.0%	.000	2.868	2.402, 3.424
	Does your best friend drink or get high a lot?	12.4%	23.1%	.000	2.127	1.782, 2.537
Social Services						
Tx Physical Health	Are you getting health care for a medical problem—for example, seeing a doctor or going to a medical clinic?	15.3%	15.8%	.721	1.035	.855, 1.253
	Are you taking medicine for a medical problem that was given to you or prescribed for you by a doctor?	15.0%	16.5%	.261	1.112	.924, 1.339
Tx Mental Health	Have you ever been seen by a counselor or psychologist because of school, family, or personal problems?	10.4%	18.6%	.000	1.966	1.621, 2.383
	Have you ever been in the hospital for a mental health or emotional problem?	13.6%	23.8%	.000	1.99	1.633, 2.424
	Are you taking medicine for a mental health or emotional problem?	14.4%	20.2%	.000	1.502	1.225, 1.843
	Are you seeing a counselor or psychologist now because of school, family, or personal problems?	14.0%	19.2%	.000	1.456	1.213, 1.747
Formal Institutions						
School	Have you ever been in special education classes in school?	14.6%	17.3%	.030	1.221	1.020, 1.463
	Right now, are you out of school because you dropped out, or you were expelled or suspended?	12.7%	24.2%	.000	2.202	1.837, 2.640
	Even if it was unfair, did you get more than two failing grades (Fs) on your last report card?	13.3%	18.4%	.000	1.479	1.246, 1.756

The unadjusted odds ratio for gender and homelessness showed that the odds of females being homeless were 1½ times greater than the odds for males in this sample (*OR* = 1.465; 95% CI [1.206, 1.778]). The odds of respondents who reported having some type of family problems being homeless ranged from 2.134 (95% CI [1.771, 2.570]) for those with someone at home who had physical fights in which someone was hurt, to 5.096 (95% CI [4.256, 6.102]) for those who reported having ever stayed away from home. Respondents who reported having a supportive family were significantly ($p < 0.001$ for each item) less likely to report being homeless than those whose families were reportedly unsupportive, as indicated by the significant odds ratios for each of the three family support items (0.307, 0.279, and 0.314, respectively). In fact, by calculating the inverse (*1/OR*) of these odds ratios (not shown in Table 1), the reduction in odds for these family support measures ranged from 3.18 ("family helps me to be person I want to be") to 3.58 ("family is there to help when something goes wrong"), indicating a threefold reduction in the odds of being homeless for respondents who reported having supportive families.

Both items of peer influence produced significantly ($p < 0.001$) higher odds ratios for homelessness. The odds of those who reported skipping school to get high with friends (*OR* = 2.868) and those who reported having a best friend who drank or got high (*OR* = 2.127) were twice the odds for those who did not report having been homeless at some time.

The two items measuring treatment for physical health problems were not significant. However, treatment for personal, family, school, emotional, or mental health problems significantly ($p < 0.001$) increased the odds of being homeless from 1½ times to nearly double the odds compared with those who did not receive this type of treatment.

School failure (*OR* = 1.479) and dropping out of school (*OR* = 2.202) significantly ($p < 0.001$) increased the odds of having been homeless. Respondents who reported ever having been in special education classes also showed increased odds (*OR* = 1.221, $p < 0.05$) of having been homeless at some time.

Our final analysis was a two-step logistic regression model. Preliminary regression analyses (not shown) using stepwise procedures indicated that a two-step approach would be the most parsimonious to present with limited space. In the first step we entered the entire block of independent variables predicting homelessness. In the second step we entered interaction terms for gender and each of the previously entered independent variables. The results of these analyses are presented in Table 2.

The columns in Table 2 provide the unstandardized logit, the standard error of the logit (*SE*), and the *p*-value at each step. In addition, we include the adjusted odds ratios (*OR*) and confidence intervals (95% CI) for each step. The results show that five main effects remained significant when we adjusted for the other measures of interest.

Looking at the final model, the intercept value was −1.761 ($p = 0.000$), indicating that when all other variables were zero, most of the sample had never been homeless. Females were significantly less likely than males to be homeless (logit = −.774, $p = 0.046$), controlling for all other variables in the model. Respondents who reported having stayed away from home for more than two nights were more likely to be homeless than those who reported having stayed away from home for one night or less (logit = 1.123, $p = 0.000$). Family support reduced the likelihood of having been homeless for respondents who said their family is there to help when something goes wrong (logit = −.478, $p = 0.000$) and their family helps them be who they want to be (logit = −.560, $p = .000$). Peer problems, as measured by whether or not the respondent had skipped

Table 2. **Results of Logistic Regression for Homelessness**

		Step 1						Step 2					
						95% C.I.						95% C.I.	
		Logit	S.E.	*p*-value	*OR*	Lower	Upper	Logit	S.E.	*p*-value	*OR*	Lower	Upper
Family Problems	Arguments at home	−.001	.122	.995	.999	.786	1.270	.162	.147	.271	1.176	.881	1.570
	Physical fights at home	.231	.124	.063	1.259	.987	1.607	.158	.154	.304	1.172	.866	1.584
	Drink/drug use at home	.328	.130	.011	1.388	1.077	1.790	.265	.160	.097	1.304	.953	1.784
	Stayed away from home	1.119	.103	.000	3.061	2.502	3.746	1.123	.123	.000	3.073	2.415	3.911
Family Support	Family helps when something wrong	−.486	.162	.003	.615	.448	.845	−.478	.191	.012	.620	.426	.901
	Family supports	−.249	.176	.156	.779	.552	1.100	−.360	.208	.083	.698	.465	1.049
	Family helps me be person I want to be	−.388	.134	.004	.678	.521	.882	−.560	.154	.000	.571	.422	.772
Peer Problems	Skipped class to get high with friends	.580	.106	.000	1.786	1.451	2.198	.661	.127	.000	1.937	1.510	2.485
	Best friend gets high	.178	.105	.089	1.195	.973	1.467	.141	.126	.261	1.152	.900	1.473
Tx Physical Health	Getting health care	−.096	.116	.409	.909	.724	1.140	−.206	.145	.156	.814	.612	1.082
	Taking medicine for physical health	−.241	.133	.070	.786	.606	1.020	−.256	.161	.112	.774	.564	1.061
Tx Mental Health	Ever seen counselor for personal/family/school problem	.280	.119	.018	1.324	1.049	1.671	.254	.137	.062	1.290	.987	1.685
	Ever hospitalized for emotional problem	.215	.128	.092	1.240	.966	1.593	.264	.158	.095	1.302	.955	1.773
	Taking medicine for emotional problem	.192	.154	.214	1.212	.895	1.640	.193	.192	.314	1.213	.833	1.766
	Seeing counselor now	.067	.119	.573	1.070	.846	1.352	.112	.146	.443	1.119	.840	1.491
School Problems	Ever been in special education class	.194	.106	.067	1.214	.987	1.493	.101	.122	.409	1.106	.870	1.406
	Right now out of school	.576	.105	.000	1.779	1.449	2.186	.613	.125	.000	1.845	1.444	2.359
	More than two Fs on last report card	−.044	.100	.658	.957	.787	1.164	−.088	.119	.461	.916	.725	1.157
Interactions: Gender	Female	−.080	.115	.486	.923	.737	1.156	−.774	.387	.046	.461	.216	.985
	Arguments at home *female							−.508	.265	.056	.602	.358	1.012
	Physical fights at home *female							.239	.265	.367	1.270	.756	2.134
	Drink/drug use at home *female							.246	.278	.377	1.279	.741	2.205
	Stayed away from home *female							−.058	.230	.801	.944	.601	1.481
	Family helps when something wrong *female							−.178	.366	.627	.837	.408	1.716
	Family supports *female							.376	.395	.341	1.457	.672	3.159
	Family helps me be person I want to be *female							.728	.321	.024	2.070	1.103	3.886
	Skipped class to get high with friends *female							−.264	.236	.263	.768	.483	1.219
	Best friend gets high *female							.090	.234	.702	1.094	.691	1.731
	Getting health care							.379	.247	.125	1.460	.900	2.369

Table 2. **Results of Logistic Regression for Homelessness** *(continued)*

		Step 1						Step 2					
						95% C.I.						95% C.I.	
		Logit	S.E.	*p*-value	*OR*	Lower	Upper	Logit	S.E.	*p*-value	*OR*	Lower	Upper
Interactions: Gender (cont.)	Taking medicine for physical health *female							.023	.288	.936	1.024	.582	1.802
	Ever seen counselor for personal/family/school problem							.106	.289	.713	1.112	.631	1.961
	Ever hospitalized for emotional problem *female							−.133	.272	.624	.875	.513	1.492
	Taking medicine for emotional problem							.023	.326	.943	1.023	.540	1.940
	Seeing counselor now *female							−.159	.255	.534	.853	.517	1.407
	Ever been in special education class							.350	.249	.160	1.419	.871	2.313
	Right now out of school *female							−.062	.236	.794	.940	.592	1.494
	More than two Fs on last report card *female							.086	.225	.702	1.090	.701	1.693
	Intercept	−1.983	.159	.000	.138			−1.761	.182	.000	.172		
		Cox and Snell *R*-square for step 1 = 0.126. Omnibus chi-square test of model = 539.169 (*df* = 19); *p* = .000. Hosmer and Lemeshow Test chi-square = 23.538; *p* = .003.						Cox and Snell *R*-square for final model = 0.132. Omnibus chi-square test of model = 567.482 (*df* = 37); *p* = .000. Hosmer and Lemeshow Test chi-square = 7.410; *p* = 0.493.					

school to get high with friends, increased the risk of homelessness (logit = 0.661, $p = 0.000$). Females were less likely to be homeless when we controlled for the other risk and protective factors (logit = −0.728, $p = 0.046$). However, when we looked at the interaction effects, only a single measure was moderated by gender: Females who agreed with the statement of family support ("family helps me to be the person I want to be") had a higher likelihood than males of having been homeless when all other variables were controlled.

Discussion

The findings of our study support the Risk Amplification and Abatement Model (RAAM) of homelessness. Four of the five social organizational domains produced significant associations with homelessness. Family problems, peer problems, and school (as a formal institution) problems each had significant, positive associations with having been homeless at some time. The social services domain did not appear to be associated with homelessness when we controlled for other variables in the model. Also, although females were more likely to be homeless than males in this sample of juvenile arrestees, gender did not appear to be an important moderator of risk and protective factors. The exception was a single indicator of family support: "family helps me to be the person I want to be." Although those who agreed with this statement were less likely to report having been homeless, this relationship depended on the gender of the respondent: Females who responded in the affirmative were more likely than males to report homelessness.

Homeless youth engage in risky behaviors, including selling drugs, theft, participating in the sex trade, and panhandling. As a result, these youth have high rates of arrests. This study points to the importance of screening for homelessness on intake into correctional settings for

juveniles and the importance of discharge planning. The "Opening Doors" Federal strategic plan to prevent and end homelessness (United States Interagency Council on Homelessness, 2010) details six areas consistently referenced in studies on youth homelessness that must be addressed for this population. These include individualized goal-based service planning, ongoing linkages to mainstream services, independent living skills training, connection to supportive and trustworthy adults and support networks, employment and education, and housing. The results of this study support these strategies and emphasize the critical importance of stabilization and reunification with supportive families, when appropriate, and the importance of remaining engaged in school. Discharge planning for previously homeless incarcerated youth must consider transitional living programs and supportive housing that includes access to life skills training and association with peers who have a positive influence. An effective response system to homeless youth will address the needs of those with histories of trauma and violence. As previously homeless youth transition from the child welfare system and juvenile courts to adult service systems, a plan for mental health services, housing, health care, and other basic needs will be important to avoid homelessness in adulthood.

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Helping Juvenile Offenders on Their Own "Turf": Tracking the Recidivism Outcomes of a Home-based Paraprofessional Intervention

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KEY WORDS: recidivism, in-home intervention, families, education, risk factor assessment

Abstract

As a problem that leads to many burdens on families and communities, juvenile delinquency has prompted much attention and many types of interventions over the years. Despite great efforts and noted progress in helping some adjudicated offenders, recidivism continues to be a substantial problem for others. As budgets continue to tighten, finding ways of addressing juvenile delinquency more effectively, and reducing recidivism in particular, has become even more important. Realizing this, the Utah Juvenile Court recently conducted a study of all its contracted programs aimed at reducing recidivism. Among the program effects observed, in-home interventions using paraprofessional workers showed striking and unique results. This article reviews these evaluation findings and considers several reasons why an in-home approach may be especially effective for reducing recidivism.

Introduction

Although the juvenile arrest rate has declined over the last decade and a half, criminal misconduct among youth continues to be a concern in the United States (Office of Juvenile Justice and Delinquency Prevention, 2011). While preemptive action to reduce the likelihood of crime still remains the best investment of resources, the demands of youth already in the system mean that most efforts go toward rehabilitation. In cases in which a youth has already committed a crime, the natural goal is to help ensure it doesn't happen again, through a "criminal desistance" process by which a person arrives at a permanent state of nonoffending (Bushway, Piquero, Broidy, Cauffman, & Mazerolle, 2011). As measured in various ways, recidivism has thus become an increasingly important benchmark of effective juvenile offender programming (National Institute of Justice, 2011; Stojkovic, Klofas, & Kalinich, 2010).

Given the variability in measurement approaches and state system characteristics, local juvenile recidivism rates vary widely—ranging from 12% to 55%, according to a report from the Office of Juvenile Justice and Delinquency Prevention (Snyder & Sickmund, 2006). This report notes that whether documented through rates of arrest, court referral, conviction, or correctional commitment and status changes, "virtually all measures of recidivism underestimate reoffending since they only include offending that comes to the attention of the system" (Snyder & Sickmund, 2006, p. 234).

Despite the problem's scope, even one instance of a youth not reoffending means not only less burden on the system, but also the addition of that one individual's positive energy and engagement in society. To increase such outcomes, a wide variety of efforts have emerged. Common approaches to reducing recidivism have included institution-based and therapy programs such as Aggression Replacement Training, juvenile drug courts, interagency cooperation programs, restorative justice interventions, and a range of individual clinical interventions (Allard, Ogilvie, & Stewart, 2007). To complement these formal institutional and clinical efforts, an array of community-based services have also been developed—from intensive supervision, life skills development, and adolescent diversion projects to alternative schools, vocational rehabilitation programs, and halfway houses (Allard et al., 2007).

As funding options are being reduced, decisions about where to best invest time and resources grow increasingly crucial. This has naturally prompted heightened attention toward outcome research that identifies those interventions with the greatest success in reducing recidivism (Latessa & Lowenkamp, 2006). Generally speaking, community-based efforts to reduce recidivism have proven more successful than their institutional counterparts (Andrews et al., 1990; Dembo, Wareham, Poythress, Cook, & Schmeidler, 2000; Dembo, Wareham, Schmeidler, & Chirikos, 2005; Henggeler & Schoenwald, 2011; Lipsey, 1999).

Across institutional and community programs, however, one barrier to improved recidivism remains especially salient: Like an alcoholic returning to the same home atmosphere following successful treatment, youth who return to a similar family environment when released from treatment are clearly at increased risk of reoffending. Regardless of improvements resulting from treatment, if the home atmosphere remains unchanged, an unacceptably high percentage of youth will likely revert to their past negative behaviors.

From such awareness, conventional programming has sought to invoke family participation as much as possible—from institutional parent involvement and family-integrated transitions to multidimensional treatment foster care and a variety of family therapy programs (e.g., Functional Family Therapy or Multisystemic Therapy). In a meta-analysis of 35 experimental studies of interventions for adjudicated youth, interventions that directly involved family members reduced recidivism at greater rates than more conventional youth-focused services (Latimer, 2001). While the addition of any family component to a program appears to improve outcomes and reduce recidivism (Timmons-Mitchell, Bender, Kishna, & Mitchell, 2006), one particular way of working with families is drawing increased attention.

Rather than removing youth or family from a home environment during service delivery, an in-home approach seeks to work and operate in the youth's place of residence, on the family's own "turf" (Hess, Barr, & Hunt, 2009). A recent Division of Child and Family Services audit in Utah concluded that in-home services not only result in better outcomes for children but were also more cost effective in that they often "prevent . . . expensive and disruptive foster care placements" (Office of the Legislative Auditor General, 2011).

The genre of in-home interventions is heterogenous, differing most basically with regard to who conducts the service. The interventions studied most often involve professional therapists

entering the home (e.g., Timmons-Mitchell et al., 2006). Although there are obvious benefits to having trained clinicians offering needed services, such interventions remain relatively expensive. According to some psychological research, trained paraprofessionals can be effective agents of change, with outcomes often equivalent or comparable to those achieved by professionals (Boer, Wiersma, Russo, & Bosch, 2005; Bright, Baker, & Neimeyer, 1999; Durlak, 1979; Montgomery, Kunik, Wilson, Stanley, & Weiss, 2010). In terms of in-home paraprofessional interventions, some impressive outcomes have been documented across diverse situations, including those targeting risk factors of low-income new mothers (Katz et al., 2011; Olds et al., 2004; Walkup et al., 2009); adults facing depression or anxiety (Boer et al., 2005; Montgomery et al., 2010); youth at risk for suicide (Gray, Dawson, Grey, & McMahon, 2011); and families struggling with aggressive children (Lewis, 2005). Nevertheless, the assumption that effective interventions must be delivered by professionals remains widespread.

More extensive research on this subject is therefore needed. In 2010, the Utah Juvenile Court commissioned the University of Utah's Criminal Justice Consortium to conduct a study of its funded recidivism reduction programs. This article summarizes and reports recidivism outcomes from that analysis, specifically of one paraprofessional-delivered in-home program that had a notable impact on helping youth avoid committing future crime.

The Intervention

Intake Practices

Utah Youth Village's Families First Program is an intensive in-home intervention used over the last 20 years, helping families with a variety of emotional and behavioral problems. While it was developed within a specific agency in Utah, the intervention is based on the Teaching-Family Model that has been tested and applied across the nation and internationally (Fixsen, Blase, Timbers, & Wolf, 2001; Lipsey & Wilson, 1998). The program is designed to teach parents and youth essential skills that can help stabilize family relationships and overall home life. Many participating families live at or below the poverty level, with associated employment struggles and difficulty meeting basic needs for housing, clothing, and food. Youth in these families often have a history of interactions with the juvenile justice system.

Families with youth in the juvenile justice system are referred to Families First by the juvenile courts. But before the juvenile courts refer such youth to Families First, they evaluate each offender's and family's risk level and unique needs using the evidence-based Protective Risk Assessment tool (Dewitt & Lizon, 2008). Information gathered about youth and family risk factors focuses the ensuing intervention in several ways. First, this information ensures that services target juvenile offenders who are at moderate to high risk for recidivism. Second, those delivering the intervention use risk information to target the development of a juvenile's social skills to meet his or her specific criminogenic needs—those that initiated this youth's involvement with the juvenile court system in the first place. This kind of focus on skills-based training has been shown to reduce recidivism compared with general community probation efforts (Lancaster, Balkin, Garcia, & Valarezo, 2011).

Along with specific risk profiles, information on the intervention readiness and personal responsiveness of offenders guides the intervention plan (Bonta & Andrews, 2010), which begins with the Jesness Inventory–Revised, a self-report measure that helps to differentiate between social maladjustment and emotional disturbance (Jesness & Wedge, 1984). The Client Evaluation of Self and Treatment is also used to confirm a youth's overall emotional adjustment, social functioning, and motivation at intake into Families First (Garner, Knight, Flynn, Morey, & Simpson, 2007).

Training of Paraprofessionals

Following initial information gathering, a trained Families First paraprofessional "family specialist" goes into the home of a referred family for an average of 8 to 10 weeks, spending between 6 and 10 hours a week with the family over multiple visits during the week. To be hired as a Families First specialist, an applicant needs a bachelor's degree and previous experience working with youth. Family specialists are then trained in a comprehensive parenting and family skills protocol based on two models specifically linked to decreased recidivism: the Risk, Need, and Responsivity Model (Bonta & Andrews, 2010), and the Teaching-Family Model (Fixsen et al., 2001). A meta-analysis of more than 200 studies examining programs with a documented reduction of reoffense rates found "consistent evidence" for positive effects associated with the Teaching-Family approach (Lipsey & Wilson, 1998, p. 86).

Training of Families First specialists takes place in three stages. The first involves training on policies, procedures, and teaching models in a classroom setting over a 2-week period; during this time, trainees also conduct a few "shadow" visits with other specialists. In the second stage, new specialists accompany and observe a supervisor during an entire 8-week intervention. In the third stage, about halfway through this apprentice intervention, specialists receive their first family assignment, with the supervisor accompanying them on at least half of these visits. In addition to in-home observation, new specialists participate in weekly supervision and staff meetings. Over the course of this first year, the amount of direct supervision tapers; new specialists must pass a formal evaluation after 1 year. This rigorous training process ensures high intervention fidelity within the program.

Implementation

Throughout a typical in-home intervention, a Families First specialist or his or her supervisor is available to the family 24 hours a day, 7 days a week. From crisis intervention and support to on-demand teaching and coaching for parents and youth, these specialists spend, on average, 6 to 10 hours with a family weekly—reflecting one unique benefit of paraprofessional-based services. In addition to individualized teaching and real-time skills development, these paraprofessionals also spend time in relationship-building activities and service to the family. A primary focus of these efforts is addressing the parent/child conflicts and general deficiencies in social skills that first brought the youth into the court's purview.

Based on Protective and Risk Assessment results and the expressed desires of the families, Families First specialists target a juvenile's specific social skills to meet the goals of the parent(s) as well as the youth's criminogenic needs. Typically, Families First specialists target six general domains of need: school, use of free time, relationships, current living environment, skills, and attitudes and behaviors (Dewitt & Lizon, 2008). The visits of the Families First specialists allow time for the skills in each of these domains to be both practiced and tested in actual living situations. Along with skills specific to their own situations, Families First specialists commonly teach youth how to resist peer pressure, develop consequential thinking skills, improve impulse control, and express feelings in pro-social ways. The specialists use positive reinforcement, modeling, role-playing, cued practice, and other methods to illustrate these skills and help families practice them together.

As the intervention unfolds, the delivery of teaching follows a systematic "phases" approach developed by Boys Town, beginning with the establishment of rapport and goal setting, followed by the teaching of several key skills for successful parent-child relations and opportunities to practice and demonstrate (Peterson, Shadoin, & Kohrt, 1996). During a typical visit during a teaching phase, the specialist will follow up on previous assignments and the parent and youth level of skill use, as well as on the overall well-being and stability of the family. Depending on

their progress, the specialist might introduce a new skill or help to refine the family's use of a skill that they had previously been taught.

By working on family dynamics within their natural environment, the ultimate aim of the Families First specialist is to alter the instinctive responses of parents and juveniles toward each other until their interactions reflect a healthy balance of accountability and warmth (Fixsen et al., 2001). Along with communication skills and bonding activities, the importance of positive reinforcement, effective consequences, continual supervision, and basic household structure are all emphasized as essential to reducing the risk of further recidivism. By cultivating new habitual responses and concretely tying those responses to the rewarding behavior of others, the intervention thus seeks to sculpt the home environment into a mutually rewarding parent/child dynamic.

After concluding the intensive in-home period, the Families First specialist continues to be available for the next year as a continuing support to the family. The specialist also conducts four brief evaluations of the juvenile and family during the first year to track long-term success and help families overcome any obstacles that may arise: one at 30 days, one at 3 months, one at 6 months, and one 1 year after the completion of the intervention. These periodic check-ins focus on a family's overall stability, new problems, additional needs, and any skill review that may be indicated.

Method

Demographics

One hundred fifty-four juvenile court youth enrolled in the Families First program participated in the study. Most often, these youth were referred by the juvenile court system, with a subset coming directly to the program without a referral. In terms of age, most of the youth ranged from 15 to 17 (83%), with another smaller group ranging from 12 to 14 (16%) and a fraction of participants who were 18 (1%). In their intake paperwork for the Families First intervention, participating parents gave their informed consent for questionnaires to be used in research.

In the Families First sample, 79% of adjudicated youth were male and 21% were female. About half of juvenile clients were Caucasian (48%), with Latino families accounting for the next largest group of clients (36%). African Americans (4%), Pacific Islanders (4%), American Indians (1.5%), and Asians (1.5%) accounted for the remaining 11% of the families.

In terms of criminal charges before intake, Families First clients reflected offense levels comparable to those of the average youth-adjudicated population (a mean of 5 misdemeanors, 1 felony, 1 status offense, and 0.5 technical charges). Across the study, risk scores confirmed various levels of youth risk, from low risk (25% of youth) to moderate risk (39%) to high risk (36%), with approximately 75% of participating youth determined to be at moderate or high risk for further criminal recidivism.

Measures

We used the Protective and Risk Assessment, based on Washington State's Prescreen Risk Assessment, a validated measure used in Utah to evaluate youth risk and protective factors to help juvenile probation officers develop service recommendations (Dewitt & Lizon, 2008). Along with this measure, we used a comprehensive database of juvenile offenses committed within the state to compute the number of offenses, by age, for each youth.

We also used several measures from the Communities that Care Survey (Arthur et al., 2007) to evaluate the intervention before and after implementation. This survey is a needs-assessment tool exploring a variety of risk and protective factors designed to help communities plan and implement successful prevention programs (Arthur et al., 2007).

Analysis

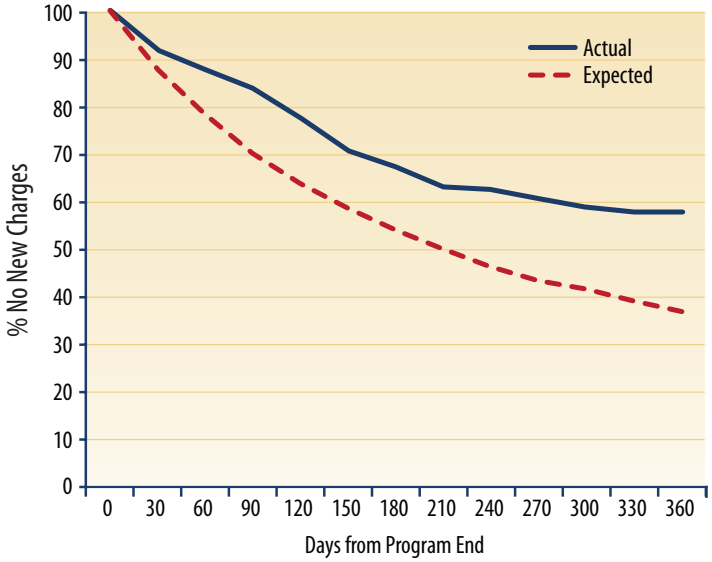
We used two methods to analyze the efficacy of the Families First intervention for court-referred youth. The first was a Kaplan–Meyer survival analysis, a method for comparing the times elapsed until a new criminal charge for different groups. This method is especially helpful for understanding reoffense rates over an entire year rather than just at individual points in time. This analysis used a risk-adjusted comparison group to compare times to new misdemeanor or felony charges 1 year from program completion. The intervention group for this analysis consisted of 154 youth who had either completed Families First or dropped out (the court data system does not distinguish between these two groups). The comparison group consisted of 3,064 youth who had received similar sanctions from the juvenile court, but with no in-home support. The interval of measurement for the survival analysis was 1 time point per month for 1 full year.

Since individual programs in the juvenile court differ on risk levels for participating youth, we made an important adjustment for this study. After we placed the name of each youth into a matrix that combined the Protective and Risk Assessment score with the youth's juvenile court history, we created a 1-year survival curve for each matrix cell (that is, the expected 1-year recidivism survival curve of youth with a high Protective and Risk Assessment score and a court criminal history of II [see Table 1 for an explanation]). Next, we placed only the name of the youth in the Families First program into the matrix (see Table 1). We used this matrix of program youth to weight each one of the general survival curves, which we then took to represent the expected recidivism of youth in the program. Ultimately, we plotted this program's recidivism survival curve next to the generally expected recidivism survival curve, using a log-rank chi-square test to determine whether the youth in the program performed better or worse than expected (see Figure 1).

Table 1. **Matrix of Prescreen Risk Assessment (PSRA) Risk Score by Court Criminal History**

	PSRA Score					
	Low		Moderate		High	
	N	%	*N*	%	*N*	%
Court Crim. History						
I (Low)	19	11	27	15	14	8
II	16	9	24	13	22	12
III	2	1	7	4	13	7
IV	4	2	8	4	9	5
V (High)	0	0	3	1	4	1

Figure 1. **Kaplan–Meyer Survival Curve for New Charges 1 Year after End of Families First Program (Completers and Non-Completers)**



The second method of analysis was a within-subjects analysis of results from the Communities that Care Survey of participating youth before and after the intervention. This analysis used a matched subject *t*-test to examine attitude changes among youth, which we based on survey results administered to youth at the beginning and at the end of the Families First program (see Table 2). The results should be interpreted carefully, because we did not make an alpha-adjustment for the multiple tests due to an expected loss of power based on this sample size. Because one or two statistically significant results

could be expected by chance, only several indicators showing positive change should be interpreted as positive results.

Table 2. **Matched *t*-Tests for Youth Given Pre- and Post-Questionnaires for Communities That Care Youth Survey**

	Cohen's *d*	*df*	*t*
Scale			
Rebelliousness	–0.25	95	2.92**
Attitudes Favorable to Antisocial Behavior	–0.22	94	2.21*
Attitudes Favorable to Drug Use	–0.21	95	2.69**
Rewards for Antisocial Involvement	–0.14	92	1.31
Belief in Moral Order	0.24	95	2.96**

*$p<.05$; **$p<.01$; ***$p<.001$.

Results

A Kaplan–Meyer survival analysis using the log-rank test indicated that the Families First group had a significantly lower recidivism rate than the risk-adjusted juvenile court group, based on a 1-year follow-up of new misdemeanor or felony charges; $\chi^2(1) = 19.40$; $p < 0.001$ (see Figure 1). The lines on the chart represent the percentage of youth who had no new charges at each follow-up time. As noted in the Methods section, we adjusted the comparison survival curve to match the risk and criminal history of youth in the Families First program.

Based on matched-pair *t*-tests of the Communities that Care scales, this analysis found that the program reduced self-reported rebelliousness ($d = –0.25$), attitudes favorable to antisocial behavior ($d = –0.22$), and attitudes favorable to drug use ($d = 0.21$) and increased belief in the moral order ($d = 0.24$). Rewards for antisocial involvement showed no change (see Table 2).

Discussion

These results underscore a number of conclusions specific to in-home services and regarding recidivism outcomes generally. Most basically, in-home interventions that rely on paraprofessional teachers can have a measurable impact on recidivism rates. In particular, these results confirmed significant reductions in rebellious and antisocial attitudes and an increased belief in the moral order following the in-home intervention. Since changes in these attitudes accompanied the changes in documented offenses, we conclude that the in-home training of the family played a meaningful role in ensuring reduced recidivism over time.

Although the change in attitudes and behavior documented are of the youth alone, both the short- and long-term differences observed are arguably connected to the family-wide intervention focus. That is, youth attitude and behavior change are likely deeper and more sustainable when parents are also shifting their own attitudes. As real change happens in the child's continuing daily environment, youth vulnerability to rearrest therefore declines significantly.

As with any study, this one has its limitations, including the fact that we did not measure attitude change of parents as part of the documented change. Also, although we adjusted the comparison group for level of risk, the comparison group was not matched to take into account other factors that may influence reoffense rate.

Taking into account these limitations, these findings are consistent with evidence from other in-home interventions, including significantly lower rates of new charges, significant reduction in rearrest with Multi-systemic Therapy (Timmons-Mitchell et al., 2006), and fewer new arrests with the Family Empowerment Intervention (Dembo, Ramirez-Garnica, et al., 2000). In addition to confirming the benefits of family and community-based care for recidivism reduction (Andrews et al., 1990; Dembo et al., 2005; Latimer, 2001; Lipsey, 1999), our results also contribute to the discussion of potential improvements in aftercare (Ziedenberg, 2006). Above all, this study adds to the growing literature on the outcomes of paraprofessional in-home interventions for a variety of problems (Dembo, Ramirez-Garnica, et al., 2000;

Gray et al., 2011; Lewis, 2005; Olds et al., 2004; Walkup et al., 2009). Within a professional context that predominantly emphasizes professional therapy, counseling, and medical treatment, these findings suggest that increasing attention be paid to the potential of paraprofessional help for families in their own homes. Because it is not immediately obvious to the larger treatment system why a paraprofessional-based in-home intervention would lead to considerable positive outcomes, we conclude this article by elaborating on key features that make this approach an attractive complement to the current system: the first two common to all in-home services, the second three especially relevant to those centered on paraprofessionals.

Family-wide Change

By basing services in the home, this kind of intervention naturally aims to work with the larger family and home system. In this way, in-home work is predisposed to avoid the common presumption that the youth alone just "needs to be fixed." Among other things, by spending considerable time in the home with the family, individual workers are able to see and reinforce the need for parental and systems change. This may underlie why family-focused, community-based interventions appear to have greater relative impact on recidivism than other types of interventions (Andrews et al., 1990; Latimer, 2001; Lipsey, 1999). The crucial impact of family factors may also explain why developmental early-intervention programs have the strongest evidence base in terms of reducing recidivism—with a 15% reduction, on average (Farrington & Welsh, 2003; Washington State Institute for Public Policy, 2001). Whether as prevention or direct intervention, in-home work appears to have substantial advantages.

These kinds of benefits are also displayed across conditions in more general service evaluations. The Families First intervention has been examined in two controlled experimental studies over the last 10 years, the first between 2001 and 2004 (Lewis, 2005), and the second between 2004 and 2007 (Gray et al., 2011). In the first study (Lewis, 2005), Families First was compared with a control group receiving professional services ordinarily available to schools and courts. This 3-year study documented statistically significant change in child behavior problems maintained 6 months later in Families First families, and demonstrated superior results relative to youth receiving typical services ($t = 2.04$, $p = 0.043$) (Lewis, 2005). Statistically significant change by those participating in Families First was also found in access to concrete services and physical care and resources being maintained 6 months later (Lewis, 2005). In addition, Lewis found superior outcomes relative to usual services ($t = 3.1$, $p = 0.002$) and in improved effectiveness of parent-child relationships ($t = 2.33$, $p = .021$): "[Families] were able to describe important parenting techniques and practices taught in the . . . intervention some eight to 10 months earlier, which they were still using effectively at the time of the interview" (Lewis, 2005, p. 506).

The second of the two studies mentioned above (Gray et al., 2011) was conducted in collaboration with the University of Utah School of Medicine and focused on suicide risk among youth in the juvenile court system. In addition to decreases in suicidality, the combined in-home and psychiatric intervention yielded an apparent reduction in recidivism. Compared with a 43% rate of reoffending after 1 year among a control group receiving typical community services, those receiving Families First in conjunction with medication management showed a 23% rate of recidivism after 1 year ($p = 0.22$). This was in addition to $100,000 in total cost savings for participating youth over the course of the study period (Gray et al., 2011).

Generalizable, Enduring Change

More than simply being respectful of and empowering to the family, being on their home turf during an intervention arguably has an impact on the sustainability of learning and

change. In a traditional intervention setting, the lessons and insights gained happen in an external setting, foreign to the individual's own environment. By practicing these skills in a familiar context, the lessons are perhaps more likely to stick (Hess, Barr, & Hunt, 2009). Evidence from the first controlled study cited earlier confirms some sustainability in intervention effects over time:

> **There was very little fall-off in the . . . change from the initial post-test to the follow-up post-test (six months later), indicating a good level of maintenance of the overall gains that families reported in connection with the intervention. . . . There was no area of response in which gains demonstrated at the initial post-test were lost. . . . That families were maintaining these positive changes over a number of months is a hopeful finding . . . [especially] in a field where many interventions have lacked staying power.** (Lewis, 2005, pp. 505–507)

We are currently organizing a long-term outcome study of the effectiveness of in-home paraprofessionals, using both qualitative and quantitative measures, focused on four specific cohorts of families: those facing depression, anxiety, attention deficit hyperactivity disorder (ADHD), and eating disorders. In addition to assessing the impact of using in-home paraprofessionals to assist and support families facing specific clinical conditions, we will be testing the long-term effects of different combinations of paraprofessional and professional medical and therapeutic interventions.

Intensity of Time

The amount of time Families First specialists are available to spend in the home, in contrast with the amount of time available in usual out-of-home services or in-home therapy, is one likely factor in this study's positive results. On average, family specialists spend 6 to 10 hours with a family in any given week, in activities ranging from in-home teaching and skill-building to other activities and services. The extensive time invested by family specialists helps to build the specialist's credibility, trust, and relationship with the youth and the family that are all greater than would otherwise be the case. In turn, the paraprofessional's teaching and skill-building become that much more effective.

Cost-Effectiveness

Given the larger economic difficulties, it is important to point out that this level of time commitment and in-home work does not necessarily require more internal funds. In the health field, community in-home programs have been shown to cost significantly less than other options (Maurana & Rodney, 2000), an advantage resulting from both a reallocation of professional time and a greater reliance on community and student efforts.

The cost of this particular in-home program is $4,156 per person over the full course of the intervention, compared with the average residential treatment total cost of $108,585 per person over the full course of the intervention. Whether targeting youth or adult populations, the savings associated with such interventions can be substantial (Allard et al., 2007; Walfish & Gesten, 2008).

For 20 families assisted by Families First between 2000 and 2001, the actual cost of the intervention was compared with the projected cost of more standard social interventions typically used in crisis situations (i.e., 8 days of inpatient treatment followed by 25 days of outpatient day treatment). Compared with $12,225 per family for standard treatment, in-home expenses ranged from $4,240 to $5,500, yielding an average savings of $7,422 per family. Among all 20 families over the course of the evaluation, projected savings totaled $148,435.

Given its relatively low cost, the Families First program is consistently offered at low or no cost to hundreds of families every year, through donations and external funding. Families who can afford it pay for it.

Scope of the Program

A final logistical advantage of in-home programs, especially those employing paraprofessionals, is the sheer reach of the program in terms of how many people can be served. The involvement of paraprofessional advocates also promises to significantly address the persistent staffing concerns already mentioned. As Cervenka and colleagues (1996) suggest:

> **Although home-based structural and strategic family systems approaches have been tested when delivered by therapists, our view is that only when such interventions are delivered by staff who have received less than a masters' level training can interventions be applied on the scale that is needed to respond to the overwhelming problems of juvenile crime, drug use, family abuse, and related conditions.** (p. 215)

Compared with 340 youth helped in the Utah Youth Village residential treatment facility since 2002, during the same period the Families First intervention has served more than 2,400 families, including 643 in the last 2 years.

Conclusion

In-home programs relying on paraprofessionals appear to have substantial and measurable effects on recidivism. On a broader level, the changes prompted by these interventions are unique in their adaptability to the home setting and seem to account for their sustainability. While such programs are accessible to a broader audience than are residential or traditional outpatient treatment programs, they are also more cost effective. Given these benefits, paraprofessional in-home interventions deserve more attention and research. Of course, in some cases, institutional interventions and treatment are crucial and in-home interventions would be contraindicated. However, given the strength of outcomes, in-home interventions deserve consideration before families opt for institution-based interventions.

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Family Centered Treatment®—An Alternative to Residential Placements for Adjudicated Youth: Outcomes and Cost-Effectiveness

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Abstract

Nearly 100,000 adjudicated youth in the United States are placed in residential facilities (or out of home) annually, at an estimated national cost approaching $6 billion. This study compares behavioral and cost outcomes for adjudicated youth in the state of Maryland who were placed out of home with those who were diverted into the Family Centered Treatment® (FCT) program, which allowed them to remain in their homes and communities. Data were provided by the Maryland Department of Juvenile Services (DJS) and FamiliFirst, Inc. Outcomes analyzed include recidivism rates, post-treatment placement rates, and program costs. Results show that FCT provides significant, positive behavioral results based on a 2-year follow-up and reduces post-treatment placements. In addition, a cost analysis demonstrates that the FCT model is a cost-effective alternative to residential placement.

Introduction

The number of adjudicated youth receiving out-of-home placement services in the United States

is estimated to be more than 100,000 annually (Sedlak & McPherson, 2010). Most out-of-home placement services for adjudicated youth are provided through state-funded Departments of Juvenile Services. In 2009, each youth in out-of-home placement cost the state approximately $240.99 per day, with an annual national cost of nearly $6 billion (Petteruti, Velázquez, & Walsh, 2009).

Reductions in state budgets are increasing the need for innovative, effective programs and services for youth and families. Such programs and services should reduce the need for out-of-home placement and secure detentions while yielding therapeutic benefits, and saving money (Illinois Models for Change, 2011; Levin, 2010; National Juvenile Justice Network, 2010, 2011). Research shows that families and youth benefit when youth remain in their communities while receiving therapeutic services (Holman & Ziedenberg, 2006). In recent decades there has been a trend toward developing models for the effective treatment of at-risk youth in their homes, with Multi-Systemic Therapy (MST) and Functional Family Therapy (FFT) presenting a strong and substantial evidence base (Alexander & Sexton, 2002; Henggeler, 1999).[1]

A large number of practitioner-developed treatment models have been significant in filling the demand for out-of- home placement services. However, these are not represented in the peer-reviewed literature because their effectiveness has not been examined with statistical rigor. This article presents a quasi-experimental analysis of the effectiveness of one such program, the Family Centered Treatment® (FCT) program, implemented with at-risk youth in the state of Maryland. Using archival data from the Maryland Department of Juvenile Services (DJS), this study compares behavioral results and program cost-effectiveness for youth placed in residential services with those of youth in the Family Centered Treatment® (FCT) program. Youth in FCT remain at home and receive focused interventions aimed at preventing residential youth placements, reducing future contact with juvenile and adult criminal justice systems, supporting youth and families in activities of daily living, and ensuring community safety.

Program

FCT, the treatment intervention described in this article, is provided as part of the Maryland Department of Juvenile Service's Non-Residential Community-Based Program. The FCT model is an innovative, family-driven therapeutic model that requires family participation in the development of strategies and goals for success, and family adherence to the goals identified. The model is practitioner developed and has been refined over a 20-year period through client response and feedback, and in concert with Stroul's best practices of family preservation services (Lourie, Stroul, & Friedman, 1998). Certification of FCT clinicians is required and is obtained only after completing an intensive 95-hour online and field competency–based training program entitled Wheels of Change© (FCT Training, 2011). A non-profit organization, FamiliFirst, Inc., provides program oversight, evaluation, and licensure to agencies using the FCT model.

The FCT plan is based on the desires and needs of the family and uses a strength-based model of intervention that engages youth and their families through intensive contact, commitment, and collaboration. A family system case review process is vital to identifying and describing specific family strengths. A fundamental premise of the FCT model is that change is easier for families to incorporate when treatment strategies reflect family behaviors that are working well and represent norms for other areas of functioning (Painter & Smith, 2010).

The FCT model incorporates components of eco-structural family therapy and emotionally focused therapy (Aponte, 1994; Johnson, 2002). The thinking behind an integration of these two

[1] See Littell and colleagues (2005) and Littell (2008) for critical reviews of the MST evidence.

approaches is that although some families can benefit from the behavioral change approach used in eco-structural family therapy (and used in home-based treatment models such as MST and FFT), other families have difficulty incorporating teaching or tools designed to address behavioral change alone due to long-term systemic problems or past trauma. Unlike MST and FFT, the FCT model specifically uses emotionally focused therapy when eco-structural techniques are insufficient to create change (Painter & Smith, 2010).

Treatment is provided in the home or other natural settings, with several hours of contact in multiple sessions each week, and lasting an average of 6 months. While the majority of service takes place in the family's household, treatment does not exclusively occur in the home. When needed, family treatment can be rendered in various environments including school, at the home of a relative, in the workplace, or in other community settings.

To ensure fidelity to the FCT model, 15 adherence measures are developed for each family during the treatment process. Because these measures are specific to each phase of treatment, they are indicators of progress and quantify the degree to which the model was followed.

Structured progress through FCT follows a four-phase model with well-defined standards for success and advancement to the next phase of treatment: *Joining and Assessment, Restructuring, Value Change, and Generalization*. Most youth and families who complete FCT have finished all four phases of treatment (Painter & Smith, 2010). *Transitional indicators* demonstrate a family's successful completion of each of phase. The transition process is guided and documented by clinicians, and success is indicated by the family's progress and *not primarily by* the number of days or sessions spent in treatment (FCT Training, 2011).

The FCT engagement process is pivotal to treatment success. In the first phase, *Joining and Assessment*, engagement requires a delicate balance between connecting to family members and challenging their modes of operation (Lindblad-Goldberg, Dore, & Stern, 1998; Robbins & Szapocznik, 2000). Staff must disarm and join with the family to create a relationship of "allies" in treatment (Minuchin & Fishman, 2004). Family acceptance of treatment often occurs during this phase (Painter & Smith, 2010). Family cooperation is an important precondition for change during all four phases of treatment, since their acceptance establishes family centeredness and cohesion.

A fundamental premise of the FCT model, and a major departure from that of MST and FFT, is the notion that to sustain behavioral changes, youth and their families must value the changes made during treatment. Accordingly, FCT includes integrated enactments designed to determine whether behavioral changes made during treatment are made in response to external expectations, or they reflect the family's desires and needs.[2] Enactments address the ways in which the family responds to conflict, communicates, and meets the needs other family members have for affection, attention, and nurturing (Johnson, 2002).

FCT provides opportunities for families to recognize functional patterns and identify individual behaviors that can be modified. FCT enables observation of problematic interactions directly, rather than relying on stories about what happened retrospectively. When an interaction or family behavior is identified as an established pattern, the goal of FCT is to redirect the interaction to provide opportunities for the family to approach tasks and communication differently. In practice, this occurs when families display behaviors that are counter to their chosen goals, disruptive, or dysfunctional. The FCT clinician who has partnered effectively can now provide guidance for needed changes. This guided behavioral change process is formally identified as the

[2] FCT defines integrated enactments as naturally occurring events that permit either identification of problematic areas of family functioning or the practice of alternative behaviors. These enactments provide the information needed to assess change and facilitate movement into further phases of treatment and closure.

Restructuring Phase of FCT. This phase addresses the origins of behavior of individuals and families and helps them recognize and address their underlying emotional and attachment needs. When integration of suggested behavioral changes is thwarted by emotional blockages due to previous trauma or past hurt, FCT clinicians use emotionally focused therapy (Johnson, 2002) to enable movement.

As the family begins to experience success, there is a decrease in maladaptive functioning. FCT views this change as a performance-based progress measure, and the therapeutic process is adjusted accordingly. At this point, the *Value Change* phase of treatment—which provides the impetus for FCT clinicians to prompt the family to examine their intent to change and consider the purpose of their changed behaviours—guides the family in identifying changed behaviors that have long-term value (Painter & Smith, 2010). As the clinician's role becomes less directive, the family examines changes made and gains an understanding of their role in the change process. Such understanding facilitates the family's ownership of these changes and enables these changes to be sustained.

Families move into the final FCT phase, *Generalization,* when they demonstrate change independently, are able to handle difficult situations on their own, and possess the tools and skills needed to overcome their issues internally. In this stage of treatment, the family focuses on their process of addressing and resolving problems. Sustainable changes and healthy functioning are fostered as the family has a clear process to follow for problem-solving when faced with future challenges. A key indicator of the family system's success is that they no longer identify individual family members or external factors as the cause of the initial problem(s). Instead, families note what they are doing differently to make family life work better and can identify and implement these changes without therapeutic intervention (Painter & Smith, 2010).

The FCT model emphasizes community and agency collaboration, and provides wraparound services through a plan that offers care for all family members. Like the family preservation model, FCT intensely involves all stakeholders such as a referring court counselor, psychiatrist, social worker, or individuals who may affect or be affected by the family's actions. Furthermore, the FCT model seeks to find resources that support family stability and meet identified eco-structural needs. The overarching goals of FCT are to keep youth in their homes, ensure the safety of the community, and prevent youth from re-entering the juvenile justice system.

The typical family referred to FCT is at especially high risk of disintegration, has not responded to traditional models of treatment, and includes youth who are treatment-resistant delinquents at imminent risk of out-of-home placement. The family, as defined within the context of FCT, is a collection of individuals, whether related or unrelated, who commit to maintaining the identified client within their structural unit.

Methods

This article evaluates the post-treatment outcomes of and program expenditures for two groups of adjudicated youth and their families sharing similar risk factors that can affect treatment outcomes. These groups were 1) youth who received FCT as an alternative to residential placement and remained in their homes and communities (the treated group), and 2) those who were placed in residential services (the comparison group). We used a combination of standard and propensity-score matching to estimate the average treatment effect on the treated (SATT) youth for the following outcomes during each of the 2 years post-treatment: residential placements, pending placements, community detentions, secure detentions, offenses, and adjudications. In addition to cross-group comparisons of offending behaviors, we examined within-group changes in behaviors over time. Table 1 provides details on definitions and measurement of outcome

Table 1. **Definition of Variables***

			Measurements
Placement Type	Restrictive Residential	Group homes, Therapeutic Group Homes, Therapeutic Foster Care, Residential Treatment Center, Impact Programs, Wilderness Programs, Substance Abuse Programs, and Secure Confinements	• Proportion of youth with Placement • Frequency of placement averaged over all youth • Days spent in placement averaged over all youth (i.e., placement duration) • Days spent in placement for those youth who experienced the placement (i.e., conditional duration) (Table 3)
	Pending	Waiting period between commitment to placement and available space	
	Community Detention	Youth remains at home with Juvenile Service supervision	
	Secure Detention	Detention Center, Reformatory	
Recidivism	Offense	Charge of violation of the law	• By offense date: Frequency of alleged offenses by youth • Proportion of youth with at least one alleged offense (Table 4) • Year-to-year changes in offense frequencies/ proportion of youth with offenses (Table 5)
	Adjudication	Court decision to adjudicate youth on offense charge	• By offense date: Frequency of adjudications by youth • Proportion of youth with at least one adjudication (Table 4) • Year-to-year changes in adjudication frequencies/ proportion of youth with offenses (Table 5)
Follow-up Periods	Year 1		First 12 months (365 days) following discharge from FCT or Group Home
	Year 2		Months 13–24 (days 365–730) following discharge from FCT or Group Home

*Maryland Department of Juvenile Services, 2003, 2009.

variables. A cost-effectiveness analysis compares the direct costs of the FCT program with the costs of residential services, as explained later in this article.

Study Sample

According to the parameters of the Maryland DJS diversion program, all youth whose histories and data were analyzed in this study qualified for both FCT and residential placement. The decision to place the youth in FCT as opposed to a residential setting was made by case managers/probation officers, the courts, and/or the parents before this study.

The sample of youth in the treated group was drawn from the set of all youth discharged from FCT during the first 4½ years of FCT field implementation in Maryland (between July 2003 and December 2007). The sample of youth in the comparison group was drawn from the set of all youth discharged during the same timeframe from group homes, therapeutic group homes, and other residential placements offering similar types of services. Because data from the adult criminal justice system were unavailable, and because youth age into the adult system at age 18, those who turned 18 during the follow-up period were not included in our analysis. Accordingly, in the first year post-treatment, we analyzed outcomes data for 447 youth in the treated group and 888 youth in the comparison group. For the second-year follow-up, we retained more than half of the first-year sample (57% of

the treated group and 54% of the comparison group). Data measuring the engagement rates of youth in both the treated and comparison groups across the entire study period were unavailable.

Data

We obtained data on demographics, offenses, and placement history for youth in both groups through the Maryland DJS. Study data contained a record of each placement, offense, and adjudication event beginning with the youth's first referral to the juvenile justice system. Each placement record contained data on program type and dates of service. Each offense record contained data on offense date, offense category (seriousness of offense), adjudication date (if applicable), and adjudicated offense.

We obtained cost data from resource coordinators at the Maryland DJS and the Institute for Family Centered Services, Inc., the FCT service provider. Cost data consisted of average daily costs for each youth in the treated group during 2006 and the average daily costs of placement in Group homes or Therapeutic Group Homes for those in the comparison group during the same year.

Statistical Procedures

Selection bias may occur when group assignment is not random. Therefore, to control for potential selection bias, we used a combination of standard matching and propensity-score matching to estimate the average treatment effect on those in the treated (SATT) group for each outcome. Matching controls for all observable differences between groups, and propensity-score matching, equalizes the overall likelihood of individuals receiving either treatment or placement. The use of matching methods and, particularly, propensity-score matching enables researchers to replicate findings from random assignments, including studies in which substantial differences exist in mean outcomes and covariates between the unmatched control and intervention groups (Dehejia & Wahba, 1999; Heckman, Ichimura, & Todd, 1997; Lee and Thompson, 2008). Exact matching in areas of service provided by the Institute for Family Centered Services allowed us to control for exogenous geographic influences. We implemented matching in Stata using the nearest-neighbor matching code developed by Abadie and Imbens (2004, 2008) by using the four closest matches for each youth receiving FCT. We chose four matches to reduce variance of the SATT estimator without increasing the bias that might result from poor matches. We corrected the estimates for bias that can result from imperfect matches, and calculated robust standard errors (Abadie et al., 2004, 2008).

The SATT statistic takes the average of the differences in outcomes across every matched pair. For a dichotomous outcome variable, the SATT interprets directly as the percentage difference between the treated and the comparison, or control groups (i.e., the effect size). For continuous outcome variables, dividing the SATT by the control group mean gave the percentage effect size. Effect sizes are reported as percentage differences and by Cohen's *d* statistic for outcomes found significant by classical criteria. Cohen's standards for small, medium, or large effects are noted (Cohen, 1988). See Sullivan, Bennear, and Honess (2011) for a more detailed exposition of the matching procedure. We conducted cross-group comparisons of demographics for the matched groups using the Welch *t*-test for unequal variances. We conducted within-group comparisons of pre- and post-treatment behaviors by comparing means across the matched groups. For reporting purposes, youth receiving FCT are referred to as the FCT group, and youth who received out-of-home services are referred to as the Placed group.

Explanatory variables in the propensity score equation included youth demographic characteristics and variables from each youth's history within the DJS system. The explanatory variables represented a risk profile for each youth, which we believed helped those in the Maryland DJS influence decisions as to whether a youth was placed into treatment and whether treatment was successful.

Results

Cross-group Comparison of Demographics

Table 2 illustrates the effect of the matching procedures on the demographic makeup of the two groups. The resulting matched groups were well balanced with respect to both demographics and pre-treatment variables, as both groups looked the same with respect to variables believed to affect both selection into groups and treatment effectiveness.

Table 2. **Participant Demographics***

	FCT	Placed
Average Age at First Offense	12.85	12.86
Mean Age at Intake	15.20	15.19
Male	75%	73%
Female	25%	27%
First Offense was Serious Category 1 or 2 Crime	18%	16%
African American	59%	59%
Caucasian	31%	33%
Hispanic	8%	8%
From Urban or Mixed Geographical Area	78%	78%

* No statistically significant differences found by Welch *t*-test for unequal variances.

Placement Patterns

Estimates of the average treatment effect on the FCT group for post-treatment placement outcomes are reported in Table 3. Because actual placement with a residential provider can be significantly delayed while waiting for space, we included pending placements as an outcome of interest. As detailed in Table 1, four types of potential placement options were studied: residential, community detention, secure detention, and pending.[3]

A brief discussion of our findings among these options for years 1 and 2 post-treatment follows.

[3] Although exploring alternative ways of measuring outcomes increases the number of independent hypotheses being tested with the data, this is a somewhat arbitrary artifact of the lack of standardized criteria for measuring post-treatment placements and disaggregation of restrictive placements into heterogeneous types. There is a similar issue with respect to measuring offense recidivism below. Therefore, this analysis conducts hypothesis testing under classical criteria.

Residential Placements

Year 1 Post-treatment: The proportion of FCT youth with post-treatment residential placements in the first year following treatment was 38%, compared with 50% of Placed youth; i.e., 24% fewer FCT youth than Placed youth experienced residential placement during this timeframe (effect size 24%, $p = 0.002$). The frequency of residential placements was significantly lower for FCT youth relative to Placed youth (0.50 for FCT youth compared with 0.63 for Placed youth); (effect size 20%, $p = .03$). In addition, the average FCT youth spent 30% fewer days in residential housing than Placed youth, with an average of 64 days for FCT youth compared with an average of 91 days for Placed youth (effect size 30%, $p = 0.002$).

Year 2 Post-treatment: We found no significant differences between the groups on residential variables. Youth in both groups experienced a decline in all measures following the first year post-treatment (see Table 2).

Community Detentions

Year 1 Post-treatment: Time that youth spent in community detention, conditional on placement, was significantly lower (23%) for FCT youth, averaging 44.5 days compared with 54 days for Placed youth (effect size 23%, $p = 0.007$). There were no significant differences in the groups regarding the proportion or frequency of youth who served community detentions.

Year 2 Post-treatment: We found no significant differences between the groups for community detention measurements, but we noted declines in community detention for both groups.

Secure Detentions

Year 1 Post-treatment: Youth in both groups had the same frequency of secure detention (0.69). The proportion of youth placed in secure detention was lower for FCT youth than for Placed youth (0.34 vs. 0.48), but the difference was not statistically significant.

Table 3. **Placement Outcomes**

	Year 1 Post-treatment				Year 2 Post-treatment			
	Mean (Standard Deviation)		SATT (*p*-Value)	Effect Size % Difference (Cohen's *d*)	Mean (Standard Deviation)		SATT (*p*-Value)	Effect Size
	FCT	Placed			FCT	Placed		
Pending Placements								
Proportion with Pending Placements	.29 (.45)	.33 (.47)	−.04 (.252)		.19 (.39)	.16 (.36)	.041 (.254)	
Frequency	.40 (.73)	.47 (.76)	−.065 (.244)		.24 (.56)	.21 (.54)	.043 (.450)	
Duration	14.62 (35.74)	24.38 (47.87)	−9.46 (.010)	−39% (.23)*	10.39 (26.23)	9.67 (31.56)	1.23 (.629)	
Conditional Duration	50.67 (51.09)	72.90 (57.59)	−19.32 (.004)	−27% (.41)**	48.02 (39.48)	54.84 (59.63)	−12.02 (.33)	
Residential								
Proportion with Residential Placements	.38 (.49)	.50 (.50)	−.118 (.002)	−24% (.24)*	.23 (.42)	.19 (.39)	.045 (.288)	
Frequency	.50 (.74)	.63 (.70)	−.123 (.03)	−20% (.18)*	.26 (.51)	.23 (.53)	.027 (.648)	
Duration	63.75 (100.14)	90.84 (114.56)	−26.85 (.002)	−30% 25*	52.68 (95.42)	52.83 (89.53)	2.24 (.825)	
Conditional Duration	169.88 (93.18)	184.51 (96.80)	−14.80 (.215)		150.12 (97.85)	133.55 (87.36)	17.13 (.405)	
Community Detentions								
Proportion with Community Detentions	.32 (.47)	.29 (.45)	.034 (.293)		.21 (.41)	.18 (.39)	.036 (.381)	
Frequency	.44 (.74)	.42 (.76)	.02 (.742)		.30 (.67)	.22 (.53)	.082 (.128)	
Duration	14.19 (27.67)	15.52 (29.65)	−1.20 (.568)		10.17 (23.29)	9.48 (25.66)	.97 (.656)	
Conditional Duration	44.57 (32.45)	54.12 (31.23)	−12.42 (.007)	−23% (.30)*	47.08 (29.40)	49.68 (39.38)	−3.17 (.722)	
Secure Detentions								
Proportion with Secure Detentions	.34 (.50)	.48 (.50)	.041 (.299)		.33 (.47)	.30 (.46)	.046 (.345)	
Frequency	.69 (.98)	.69 (.88)	.005 (.939)		.57 (.92)	.43 (.82)	.15 (.091)	
Duration	12.56 (24.47)	13.70 (23.41)	−.184 (.606)		9.34 (18.90)	8.35 (18.90)	1.16 (.574)	
Conditional Duration	28.93 (30.12)	28.61 (26.81)	−.192 (.946)		27.84 (23.81)	27.54 (26.01)	−1.12 (.796)	

By Cohen's Standard, effect sizes are *small, **medium.

Year 2 Post-treatment: We found reductions in secure detention for youth in both groups, with 33% of FCT youth and 30% of Placed youth having experienced secure detention. While both groups reduced their frequency of secure detentions in year 2 (0.57 for FCT youth and 0.43 for Placed youth), the between-group difference was not significant at classical levels of significance.

Pending Placements

Year 1 Post-treatment: FCT youth spent 14.6 days pending placement, significantly lower than the 24.3 days for Placed youth (effect size 39%, $p = 0.01$). FCT youth spent 21 fewer days (51 versus 72) pending placement than did Placed youth (effect size 27%, $p = 0.004$).

Year 2 Post-treatment: For both groups, the number of youth with pending placements decreased 19% for FCT youth and 16% for Placed youth; the frequency of pending placements decreased to 0.24 for FCT youth and 0.21 for Placed youth. No significant differences were found between the two groups.

Offense Recidivism

Mean frequencies and proportions of recidivism are reported in Table 4, along with within-group tests of differences in means over time. For

Table 4. **Within Group Comparisons of Pre- and Post-treatment Offense Behaviors**

	Mean (Standard Deviation) [Percentage Change]			*p*-values: Differences in Means	
	1 Year Pre-treatment	1 Year Post-treatment	2 Years Post-treatment	Change in Year 1 Compared with Pre-treatment	Change in Year 2 Compared with Year 1
Family Centered Treatment®					
Offense Frequency	4.38 (5.12)	2 (2.74) [−54%]	1.72 (3.41) [−14%]	0.000	.24
Proportion Offending	.87 (.336)	.60 (.491) [−31%]	.41 (.493) [−32%]	0.000	0.000
Adjudications Frequency	1.69 (1.94)	.69 (1.48) [−59%]	.65 (1.84) [−6%]	0.000	.75
Proportion Adjudicated	.79 (.41)	.32 (.466) [−59%]	.21 (.41) [−34%]	0.000	0.000
Comparison Group					
Offense Frequency	4.5 (5.62)	1.79 (2.39) [−60%]	1.67 (3.09) [−0.7%]	0.000	.25
Proportion Offending	.89 (.317)	.61 (.489) [−31%]	.44 (.497) [−23%]	0.000	0.000
Adjudications Frequency	1.66 (1.89)	.44 (.99) [−73%]	.75 (2.42) [+70%]	0.000	0.000
Proportion Adjudicated	.80 (.399)	.26 (.437) [−68%]	.24 (.42) [−0.8%]	0.000	.24

Table 5. **Cross Group Recidivism Outcomes Measured by Differences in Frequencies/Proportions Between Years for Each Youth**

	FCT Mean[1] (Standard Deviation)	Placed Mean (Standard Deviation)	SATT	*p*-value	Effect Size % Difference (Cohen's *d*)
Change in Frequency of Offenses					
Year 1 Relative to Pre-treatment Baseline	−2.38 (.26)	−2.71 (.13)	.26	.50	
Year 2 Relative to Year 1 Baseline	−.44 (.28)	−.11 (.10)	−.39	.28	
Change in Proportion of Youth Committing Offenses					
Year 1 Relative to Pre-treatment Baseline	−.27 (.027)	−.28 (.013)	.009	.831	
Year 2 Relative to Year 1 Baseline	−.20 (.04)	−.14 (.02)	−.068	.29	
Change in Frequency of Adjudications					
Year 1 Relative to Pre-treatment Baseline	−1.0 (.11)	−1.22 (.05)	.19	.19	
Year 2 Relative to Year 1 Baseline	−.17 (.25)	.22 (.065)	−.43	.08	
Change in Proportion of Youth with Adjudications					
Year 1 Relative to Pre-treatment Baseline	−.47 (.028)	−.54 (.013)	.07	.09	
Year 2 Relative to Year 1 Baseline	−.13 (.036)	−.008 (.017)	−.13	.02	>100% (4.3***)

[1] Negative mean values indicate a reduction in behavior.
By Cohen's Standard, effect sizes are *small, **medium, ***large.

cross-group comparisons (Table 5), the year-to-year change in frequency is reported for each youth, as are the changes in proportions for each group.

Within-Group Offense Recidivism Outcomes: Table 4 shows that in the first year following treatment, both groups experienced significant reductions in recidivism compared with 1 year before treatment on all variables. The average frequency of offenses fell by more than 50% for both groups, while the proportion of the sample that committed alleged offenses fell by 31% for both groups. Moreover, the proportion of youth offending in the second year fell again by approximately 30% for both groups, although the average frequency of offenses remained static. In the second year following treatment, the frequency of adjudications rose significantly for youth in the Placed group compared with adjudications the year before; however, the proportion of youth adjudicated remained static between years 1 and 2. Conversely, FCT youth experienced a large and significant drop in the proportion of offenses and adjudications, but the average frequency of their offenses remained static compared with the previous year.

Cross-Group Comparisons of Recidivism Trends

Year 1 Post-treatment: While both groups experienced declines in all categories relative to their pre-treatment status, we found no significant

differences between the groups in terms of the proportion of offending youth, offense frequency, adjudication frequency, or the proportion of youth with adjudications.

Year 2 Post-treatment: During this period, both groups showed declines in the proportion of youth offending but no change in the frequency of offending, with no significant difference between groups. Youth in the Placed group showed a large increase in the frequency of adjudications, and no significant decrease in the proportion of youth with adjudications. There was a greater decline in adjudication frequency for youth in the FCT group, who had a significantly lower proportion of adjudications ($p = 0.02$, effect size 1600%).

Discussion of Offense Findings

Taken together, the within- and across-group results indicate both groups exhibited significant reductions in offenses that were sustained through the second year. Indeed, during the second year, the proportion of youth offending fell even further for both groups. The fact that the average frequency of offenses remained static in the second year, however, means the recidivists must have committed offenses at an increased rate. For these outcomes, both FCT and Group Home care seem to have produced the same results. But if adjudicated offenses are examined as the measure of recidivism, the results are quite different.

In the first year following treatment, both groups showed a decline in the frequency of adjudications and the proportion of youth adjudicated. However, those in the FCT group showed a 13% smaller decline in the proportion of youth with adjudications. However, this result is more than offset in the second year by adjudications in the placed group. While the FCT group showed a decline in the proportion of adjudications and no change in their frequency (consistent with the offense results and therefore consistent with a constant rate of adjudications per offense), the Placed group showed no change in proportion and a large increase in the frequency of adjudications. Taken together with the offense results, this suggests that not only were Placed recidivists committing offenses at a higher rate than those in the FTC group, but the offenses of Placed recidivists were adjudicated at a higher rate.

Cost-Effectiveness

The cost analysis depicted in Table 6 shows costs for treatment periods limited to 368 days of service for all categories.[4] Because this study analyzed a diversion program, the cost calculation follows the parameters of the program by assuming all youth would have been placed in a residential service had FCT not been an alternative. Therefore, we determined costs by assuming that youth receiving FCT would have been placed in a Group Home or Therapeutic Group Home. For all Placed youth in this sample, 87.5% were placed in Group Homes and 12.5% in Therapeutic Group Homes; therefore, this placement ratio is assumed for FCT youth in the counterfactual calculation of costs (Sullivan et al., 2011).

Cost-Effectiveness Results

The average program cost for each youth in FCT was $12,080. The average program cost for each youth was $36,630 in Group Homes and $36,348 in Therapeutic Group Homes—both more than three times the cost of FCT. Had FCT been unavailable, all youth would have been placed in Group or Therapeutic Group Homes, and the cost for serving those youth would have been $16.3 million. Every $1.00 spent on the FCT program saved the state of Maryland between $2.03 and $2.29, for a total estimated savings of $10.9 million to $12.3 million over 4½ years.

These findings build on and support financial savings reported by other home-based therapeutic

[4] Although the expected length of stay was 6 to 9 months for Group Home placement and 6 to 12 months for Therapeutic Group Home placement, 116 youth were observed who had more than 365 days in placement and 7 youth were observed who had more than 730 days in placement. Because youth with long service periods may be outliers, we present a conservative analysis that truncates the length of placement at the maximum FCT service period of 368 days.

Table 6. **Cost Benefit: Truncated Length of Service**

	FCT	Group Home	Therapeutic Group Home
Cost per Day in 2006 Dollars	$80	$198	$233
Number of Youth	446	777	111
Average Length of Service (Range)	151 days (16–368 days)	185 days (16–368 days)	156 days (16–368 days)
Average Program Cost for One Youth	$12,080	$36,630	$36,348
Average Daily Cost/All Youth	$35,680	$153,846	$25,863
Program Cost for All Youth during Time Frame	$5,387,680	$28,461,510	$4,034,628
Total Program Cost	$5,387, 680	$32,496,138	
Total Counterfactual Cost [.875 (446 × 36,630) +.125 (446 × 36,348) = $16,321,259]	$16,321,259		
Total Program Savings	$10,933,579		
Savings per Dollar Spent: FCT vs. Placement	$2.03		

diversion programs, including MST and FFT (Aos et al., 2011; Illinois Models for Change, 2011; National Juvenile Justice Network, 2011). Indeed, the cost benefits of FCT to the state of Maryland reflect reported direct cost reductions in states using diversion programs for adjudicated youth throughout the United States (Levin, 2010; Office of Program Policy Analysis & Government Accountability, 2010; Petteruti et al., 2009; Tyler, Ziedenberg, & Lotke, 2006).

Study Limitations

For this sample of youth, we were unable to draw a distinction between FCT youth who were engaged in treatment and those who were not. Therefore, all youth were included in the study, regardless of whether they actually received the full treatment or were discharged early for noncompliance, refusal of services, and the like. Assuming engagement is not an issue for Group Homes (in the sense that refusing services is not an option), this may have resulted in an estimate of the effectiveness of FCT that was biased downward.

Similarly, we were unable to observe attrition rates, since we used archival data from the Maryland DJS. Any attrition from that database was due to relocation, death, or the transition youths make into the adult system. There is no reason to hypothesize that any systematic relationship existed among youth in our study who died or relocated that would have affected study results. There might have been systematic differences among older youth who transitioned into the adult system that would have influenced these findings. Therefore, outcomes from this study cannot be extrapolated to an older juvenile population.

The lack of adult system data resulted in a sample size loss that had a negative impact on the study in other ways. The loss of statistical power precluded a multisite analysis of FCT in the five geographically distinct FCT service areas in Maryland. It also prevented analyses of other covariates of interest, such as gender and race. The program is ongoing, and additional data will be available to expand the analysis of FCT.

Discussion

In a rigorous initial analysis of aggregate outcomes across five provider sites and a heterogeneous population with respect to risk factors/demographics, this study reveals a promising model new to this literature. FCT works at least as well as restrictive residential placements at reducing offense behaviors, and better at reducing new placements, at a substantially reduced cost. The model is effective with females and males, African Americans, Hispanics, and Caucasians. Components of the model that probably account for this success include the manner in which the model engages the participants, the breadth of family inclusion and the structure of the supervision, and an approach that allows fidelity to all of the components of the model while creating awareness of and accommodating gender and cultural needs.

The FCT model is currently being replicated in other states, and preliminary evidence regarding outcomes and costs are encouraging. As additional data become available, future research efforts will focus on cross-site comparisons of effectiveness, as well as examinations of youth/family-specific covariates of success (i.e., for whom does this program demonstrate effectiveness?).

Conclusion

In this long-term follow-up study of adjudicated youth in the state of Maryland, FCT is shown to be a promising and cost-effective alternative to residential placements. In the first year following treatment, we found that youth receiving FCT significantly reduced the frequency of their offenses and adjudications, and that the proportion of youth with offenses and adjudications was also significantly reduced. These findings were sustained 2 years post-treatment. The results were consistent across groups in the first year following treatment. In the second year following treatment, however, FCT youth exhibited a much greater decline than the Placed group in both the average frequency of adjudications and the proportion of youth with adjudicated offenses. Moreover, in the first year following treatment, we found that the effect of FCT reduced the average frequency of residential placements, days in pending placements, and days in community detentions relative to those of the comparison group. These outcomes were achieved at substantial cost savings: every $1.00 spent on the FCT program saved the state of Maryland between $2.03 and $2.29, for a total estimated savings of $10.9 million to $12.3 million over 4½ years.

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Preventive Detention and Out-of-Home Placement: A Propensity Score Matching and Multilevel Modeling Approach

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Abstract

Researchers have started examining the impact of early juvenile court decisions on subsequent court outcomes for youth. The empirical literature generally finds that after controlling for legal and extralegal factors, early decision points can have a negative effect on youth later in the court process. The present study contributes to this body of knowledge through the examination of youth who were adjudicated delinquent during 2005 in West Virginia. Using both propensity score matching and multilevel modeling, the findings indicate that preventive detention increases the probability of out-of-home placement for youth. Policy implications and directions for future research are explored.

Introduction

In 2008, the rate of youth in residential facilities nationwide was 263 per 100,000 (Sickmund, 2010). In West Virginia in 2008, the placement rate was 320 per 100,000—almost 22% higher than the national rate. Although the placement rate has been steadily declining in recent years, both nationally and in West Virginia, the rate of residential placement still poses a serious concern.

The U.S. Office of Juvenile Justice and Delinquency Prevention (OJJDP) conducted a nationally representative survey, the Survey of Youth in Residential Placement (SYRP), and found that residentially placed youth were not receiving adequate services (Sedlak & McPherson, 2010). For instance, the SYRP noted that although there are a high number of counselors in juvenile detention facilities, most of these counselors are not certified mental health professionals. This is particularly important given the high number of institutionalized youth who ponder suicide, have problems controlling their anger, have had traumatic experiences, and abuse substances. The SYRP also revealed that confined youth were not provided the same level of educational services (e.g., the same number of hours and special education support for those with learning difficulties) as youth in the general population. The SYRP results imply that confined youth may not be receiving the rehabilitative services that are meant to be fundamental to the juvenile court.

The high rates of recidivism among confined youth have caused researchers to question the "effectiveness" of confinement (Austin, Johnson, & Weitzer, 2005), which separates youth from family, traditional schools, and the community and makes it difficult for them to successfully reintegrate once released.

Based on the potential negative outcomes of confinement, it is important to examine those factors that may increase it. Although research has examined the role of legal and extralegal factors in the confinement decision (e.g., Cauffman et al., 2007), prior studies have demonstrated that decision points in the juvenile justice system are influenced by earlier decisions, in addition to traditional legal and extralegal factors (Leiber, 2009; Leiber & Fox, 2005; Rodriguez, 2010). One of the most crucial decision points to study is the preventive detention decision. Once arrested, youth are provided a hearing to determine whether they will be released to the custody of their parents or held in preventive detention for the remainder of the court proceedings. Research has found that the preventive detention decision plays a significant role in subsequent court decisions and outcomes. Therefore, the purpose of this study is to examine the influence of the preventive detention decision on out-of-home placement among youth adjudicated delinquent (i.e., convicted).

Preventive Detention and Out-Of-Home Placement

Although researchers have studied on the influence of preventive detention on juvenile court outcomes, fewer have focused specifically on the effect of preventive detention on subsequent out-of-home placement decisions. However, research examining the effect of preventive detention on the likelihood of youth being placed outside the home has yielded fairly consistent results. Wu (1997) examined a sample of approximately 2,000 youth from 17 Ohio counties in 1989. Of the 17 counties, 13 were urban and 4 were rural. The study found that youth held in preventive detention were more likely than those released to the custody of parents or guardians to be sentenced to an out-of-home placement. The analysis controlled for county, but as an individual-level rather than a structural-level factor.

Similarly, Secret and Johnson (1997) examined more than 21,000 adjudicated youth in Nebraska from 1988 to1993. After controlling for individual-level factors, they found that youth held in preventive detention were more likely than those not held to be sentenced to an out-of-home placement. Although this study included the county as a control variable, the researchers accounted for it in an individual-level rather than a multilevel analysis.

Researchers found comparable results in Iowa. Leiber and Fox (2005) examined more than 5,000 cases of delinquent youth over a 21-year period (1980–2000) from a single juvenile court. They, too, found being held in preventive detention increased the probability of out-of-home placement. Similarly, Leiber (2009) examined a 2003–2004 sample of slightly more than 900 youth in a single Iowa county, finding the same significant negative impact of preventive detention on change of placement.[1]

In addition, Rodriguez (2010) examined more than 23,000 youth referred to the juvenile court in 2000. She included both individual- and structural-level factors in her research. After statistically controlling for all of these factors through multilevel modeling, Rodriguez found that youth held in preventive detention in Arizona were more likely to receive an out-of-home placement than youth who were not.

Based on studies examining the effect of preventive detention on out-of-home placement decisions, preventive detention seems to increase the probability of youth who have been adjudicated delinquent being placed outside of the home. Leiber and Fox (2005) posit that the juvenile justice system should be viewed as a process in which decisions made early influence those made

[1] Leiber and Fox (2005) defined "change of placement" as being placed in a training school, residential facility, or group home, or being transferred to adult court.

later. Stated differently, decisions made by juvenile court judges early in the process may have unintended consequences for later outcomes. Examining the effect of preventive detention on out-of-home placement should help to test this connection.

Limitations of Current Research

The effect of preventive detention on the type of disposition has been the focus of some research, although studies have included a limited number of jurisdictions (e.g., Leiber, 2009; Leiber & Fox, 2005), have not accounted for structural factors when using data from multiple jurisdictions (e.g., Secret & Johnson, 1997; Wu, 1997), and have lacked sufficient control variables (e.g., Secret & Johnson, 1997). Dixon (1995) presents an organizational context of criminal sentencing, which posits that multiple court jurisdictions should not be treated as a unitary system. Although different courts may be located within the same state, each court may be influenced by different political, social, and organizational factors, which then influence decisionmaking. Therefore, research should account for factors that occur at the organizational (e.g., county) level, as the present study attempts to do.

Furthermore, research in this area tends not to account for selection bias. Because it is impractical to randomly assign youth to preventive detention, research cannot usually establish a clear connection between preventive detention and subsequent court outcomes. In addition, given the quasi-experimental nature of this research, studies in this area tend not to examine the sensitivity of the findings to hidden bias.

The current study seeks to add to the empirical research by examining the effect of preventive detention on out-of-home placement through the use of propensity score matching (explained below) and multilevel modeling. Based on prior research on the relation between detention and juvenile court outcomes, the current study examines the following hypothesis: After controlling for structural and individual factors, youth who are placed in preventive detention have a significantly greater probability of being sentenced to out-of-home placement than youth who are not placed in preventive detention.

Methods

The initial data for this study consist of juveniles who were adjudicated delinquent (convicted) of misdemeanors or felonies in the West Virginia juvenile court system in 2005. These data were obtained from the National Juvenile Court Data Archive (NJCDA), which OJJDP established to house state juvenile court data. Status offenders or those processed for a noncriminal probation violation were not included in the sample. In addition, these data include only youth adjudicated delinquent for new offenses, not those referred for technical violations. Although there are multiple ways for youth to be referred to the juvenile court (e.g., by parents, schools, and so forth), these data include only youth who were referred by law enforcement, since comparatively few adjudicated youth are referred by other sources. Of the entire sample of 509 youth, 112 were held in detention and 397 were not.

Propensity Score Matching

Propensity score matching is a procedure that minimizes the effect of selection bias by allowing researchers to create a comparison group that can help to address the counterfactual: that is, what would be the outcome if a particular treatment or intervention had *not* taken place? In propensity score matching, researchers use observed characteristics to create a score (ranging between 0 and 1) indicating each person's probability of being included in the treatment group (Rosenbaum, 2002; Rosenbaum & Rubin, 1983, 1985). Researchers then use the propensity score to create a matched sample of treatment and control participants. In essence, the propensity score is a score that balances observed covariates (control variables), meaning the distribution of the covariates is the same for the treatment and comparison groups. Investigators can then make

direct comparisons between the two groups on particular outcomes central to the research.

To obtain the propensity score, the first step was to model the probability of receiving preventive detention using logistic regression. I included the covariates age, gender (male or female), race (Black, White, or Other, with White used as the reference category), prior arrest (yes or no), prior adjudication (yes or no), level of offense (felony or misdemeanor), type of offense (person or property), living arrangement (two parents, one parent, or other living arrangement, with two parents serving as the reference category), and education (mainstream or not mainstream). From the logistic regression model, I calculated the predicted probability (i.e., the propensity score) of preventive detention for each juvenile in the sample.

After obtaining the propensity scores, I used a matching algorithm to match offenders based on whether or not they had been held in preventive detention. I used the PSMatch_Multi command in SAS 9.2 with nonreplacement and a caliper of 0.10 (Parsons, 2000). This SAS macro allows for propensity scores to be used as a way of matching a control-group participant (i.e., those not held in preventive detention) with an experimental-group participant (i.e., those held in preventive detention) at a 2:1 ratio. Using this ratio allows for a greater retention of the original sample in the final propensity score model, due to the selection of two control cases for each treatment case. Using a 2:1 ratio allows for two members of the control group to be matched to one similar member of the experimental group. In essence, using a 2:1 ratio allows a larger percentage of the sample size to be retained for the final analyses than would be possible using a 1:1 ratio.

Hierarchical Generalized Linear Modeling

Given the nested nature of the data, and because the outcome was measured dichotomously, hierarchical generalized linear modeling (HGLM) was employed for a second set of analyses. Therefore, I also conducted a multilevel analysis to assess the role of detention while controlling for structural level factors (Hox, 2002; Raudenbush & Bryk, 2011). All of the factors were grand-mean centered in the analyses. In addition to the HGLM full models, I also conducted cross-level interactions to determine whether detention significantly interacted with any of the structural variables when examining out-of-home placement.

Measures

Dependent Variable

The dependent variable is the decision to sentence youth adjudicated delinquent to out-of-home placement. Those not sentenced to out-of-home placement were coded as "0" and those sentenced to out-of-home placement were coded as "1."

Individual-Level Variables/Covariates

The central independent variable is preventive detention.[2] If youth were placed in preventive detention at any time before adjudication, they were coded as "1." If youth were not placed in preventive detention, they were coded as "0."

Multiple covariates were used in the propensity score matching, and a serious attempt was made to include factors that have been shown to have an effect on the preventive detention decision. I included four legal variables included as covariates: severity of offense, type of offense, prior arrest, and prior adjudication. Severity of offense was measured as a dichotomy (1 = felony, 0 = misdemeanor) (Freiburger & Jordan, 2011). Type of offense was also measured dichotomously (1 = person offense, 0 = property offense) (Armstrong & Rodriguez, 2005; Freiburger & Jordan, 2011).[3] There were two prior record covariates: prior arrest (1 = yes, 0 = no) and prior adjudication (1 = yes, 0 = no) (Armstrong & Rodriguez, 2005; Freiburger & Jordan, 2011; Leiber, 2009).

[2] Preventive detention does not include house arrest, electronic monitoring, and the like; it includes only placement in a juvenile facility for secure detention.

[3] Drug offenses were excluded due to the small number of adjudications; there were insufficient numbers for statistical analysis.

Extralegal variables are important in juvenile court proceedings because juvenile court judges often give great weight to some of these in their decisionmaking. For instance, judges may view having two parents in the home as providing youth with greater supervision, access to transportation for treatment, and so on, which then could influence the disposition imposed. Therefore, I included several extralegal variables as covariates: age (measured continuously) (Armstrong & Rodriguez, 2005; Jordan & Freiburger, 2010); gender (1 = male, 0 = female) (Armstrong & Rodriguez, 2005; Leiber, 2009); race (White, Black, and other race, with White serving as the reference category in the analyses) (Armstrong & Rodriguez, 2005; Harms, 2002; Wordes, Bynum, & Corley, 1994); number of parents in the home (one parent, two parents, or other living arrangements, with two parents serving as the reference category in the analyses) (Armstrong & Rodriguez, 2005; Freiburger & Jordan, 2011; Leiber, 2009); and education (1 = mainstream, 0 = non-mainstream) (Freiburger & Jordan, 2011).

Structural-Level Variables

Researchers have demonstrated the significant effect of structural factors in juvenile justice decisionmaking (e.g., Freiburger & Jordan, 2011; Rodriguez, 2007, 2010; Sampson & Laub, 1993); the organizational context of sentencing theory provides a foundation for controlling for structural county-level factors (Dixon, 1995). The following structural factors have been empirically linked to juvenile justice decisionmaking: juvenile delinquency case rate of youth ages 10–17 (Rodriguez, 2007), index crime rate, population density (Freiburger & Jordan, 2011), percentage Black (Freiburger & Jordan, 2011), percentage of residents with a high school diploma, median household income, and the percentage of families living in poverty (Freiburger & Jordan, 2011; Rodriguez, 2010).

The first structural factor is the juvenile delinquency case rate, which was obtained from the Annie E. Casey Foundation (2005). This is a continuous variable that measures the number of cases (i.e., written and signed complaints or petitions) reported per 1,000 youth ages 10–17 within each county. The second structural factor is the index crime rate, which was obtained from the 2005 edition of the *Crime in West Virginia* report, the official state publication of crime in all West Virginia counties (West Virginia State Police, 2005). The index crime rate is a continuous variable that reflects the number of index crimes (both against persons and property) per 100,000 residents within each county in West Virginia.

The remaining structural factors were based on the 2000 U.S. Census. Population density is a continuous measure calculated by dividing the population of the county by the total land area. Percentage Black is a continuous measure that reflects the percentage of Black residents in each county. The percentage of residents with a high school diploma is also a continuous measure that reveals the percentage of residents in the county who have reached that minimum educational threshold. Median household income is a continuous measure that reflects the median income among residents who reported being employed in each county. The last structural factor, the percentage of families living in poverty, is a continuous variable based on total household income that indicates the percentage of families in each county who fall at or below the poverty level.

Results

Propensity Score Matching Results

The original sample size was 509 youth, 112 of whom were held in preventive detention and 397 of whom were not. Table 1 compares these groups on the covariates before propensity score matching. The preventive detention group, on average, was more likely than the nonpreventive detention group to be Black, have a prior arrest, and have a prior adjudication. Youth in the preventive detention group were also less likely to have two parents in the home and be enrolled in

mainstream education. I then used multiple analyses to demonstrate the need for propensity score matching. First, an independent sample *t*-test was used for all of the covariates. As shown in Table 1, five of the covariates were significantly different between the two groups based on their mean scores. However, research strongly suggests that *t*-test scores alone can be misleading, because statistical significance is partially influenced by the sample size (Austin 2008; Loughran et al., 2010; Rosenbaum & Rubin, 1985). Therefore, I took the additional step of calculating the average difference in means, as a percentage of the average standard deviation, in determining covariate imbalance. The standardized absolute percentage difference was based on the means and was not influenced by the unit of measurement or the sample size. The following formula was used to calculate the standardized absolute differences in percentages (Loughran et al., 2010; Rosenbaum & Rubin, 1985):

$$100(\overline{X}_t - \overline{X}_c)/[(s_t^2 + s_c^2)/2]^{1/2}$$

$\overline{X}_t$ and $\overline{X}_c$ represent the means for the treatment and control groups, respectively, and s_t^2 and s_c^2 represent the variances. Rosenbaum and Rubin (1985) state that a standardized absolute bias equal to or greater than 20% is an indication of imbalance. Table 1 indicates that five of the covariates are imbalanced in the original full sample.

After using propensity score matching, there were 110 successfully paired matches (n = 330, given that there were two control participants for each experimental participant). Put differently, I was able to successfully match 110 of the original 112 cases (98%) from the experimental (preventively detained) group with participants from the control group. As shown in Table 2, there was no significant difference between

Table 1. **Group Comparisons on Covariates Before Propensity Score Matching**

Variables	Mean	*T*-Value	*p*-value	Standardized Difference
Age				
Preventively detained	15.13	0.67	.51	6.83%
Not preventively detained	15.02			
Gender (Male = 1)				
Preventively detained	0.81	1.33	.19	12.15%
Not preventively detained	0.76			
Black				
Preventively detained	0.19	2.37	<.05*	28.97% †
Not preventively detained	0.09			
White				
Preventively detained	0.79	1.78	.08	18.40%
Not preventively detained	0.86			
Other race				
Preventively detained	0.03	1.00	.32	10.73%
Not preventively detained	0.05			
Prior arrest				
Preventively detained	0.34	3.34	<.01**	37.07% †
Not preventively detained	0.18			
Prior Adjudication				
Preventively detained	0.27	3.20	<.01**	38.33% †
Not preventively detained	0.12			
One Parent				
Preventively detained	0.50	0.26	.80	2.00%
Not preventively detained	0.49			
Two Parents				
Preventively detained	0.31	2.09	<.05*	22.91% †
Not preventively detained	0.42			
Other Living Arrangement				
Preventively detained	0.07	0.75	.46	8.26%
Not preventively detained	0.05			
Mainstream Education				
Preventively detained	0.49	2.70	<.01**	28.45% †
Not preventively detained	0.63			
Felony				
Preventively detained	0.38	0.71	.48	6.21%
Not preventively detained	0.35			
Person Offense				
Preventively detained	0.49	1.13	.26	12.02%
Not preventively detained	0.43			

* $p < .05$; ** $p < .01$
† Covariate out of balance.

Table 2. **Group Comparisons on Covariates After Propensity Score Matching**

Variables	Mean	*T*-Value	*p*-value	Standardized Difference
Age				
Preventively detained	15.14	0.26	.80	2.56%
Not preventively detained	15.18			
Gender (Male = 1)				
Preventively detained	0.81	0.10	.92	2.53%
Not preventively detained	0.80			
Black				
Preventively detained	0.17	0.65	.52	5.45%
Not preventively detained	0.15			
White				
Preventively detained	0.80	0.00	1.00	0.00%
Not preventively detained	0.80			
Other race				
Preventively detained	0.03	1.25	.21	10.07%
Not preventively detained	0.05			
Prior arrest				
Preventively detained	0.34	0.42	.68	6.38%
Not preventively detained	0.31			
Prior Adjudication				
Preventively detained	0.26	0.82	.41	9.30%
Not preventively detained	0.22			
One Parent				
Preventively detained	0.50	0.31	.76	3.99%
Not preventively detained	0.48			
Two Parents				
Preventively detained	0.32	1.55	.12	16.66%
Not preventively detained	0.42			
Other Living Arrangement				
Preventively detained	0.07	0.15	.88	0.00%
Not preventively detained	0.07			
Mainstream Education				
Preventively detained	0.50	1.01	.31	12.00%
Not preventively detained	0.56			
Felony				
Preventively detained	0.37	0.08	.94	2.06%
Not preventively detained	0.38			
Person Offense				
Preventively detained	0.48	0.70	.48	8.00%
Not preventively detained	0.44			

* $p < .05$; ** $p < .01$

[1] Covariate out of balance.

the means of the two groups on any of the covariates. In addition, none of the standardized absolute biases exceeded 20 percent, suggesting balance is achieved in creating the matches. Finally, I used the following formula to determine the percentage difference in bias reduction for initially imbalanced covariates (D'Agostino, 1998; Rosenbaum & Rubin, 1985):

$$100(1 - b_m/b_i)$$

with b_i and b_m representing the covariate mean difference between the preventively detained and nonpreventively detained groups after matching and initially, respectively. The results presented in Table 3 indicate that of the initially imbalanced covariates, standardized biases were reduced by between 9% and 80%.

Table 3. **Percentage Bias Reduction for Variables with Initial Standardized Biases Greater than 20 Percent**

Variable	Initial Bias	Bias After Matching	Percent Reduction
Black	.10	.02	80%
Prior Arrest	.16	.03	81.25%
Prior Adjudication	.15	.04	73.33%
Two Parents	.11	.10	9.09%
Mainstream Education	.14	.06	57.14%

Out-of-Home Placement Results

It is common to use an independent samples *t*-test to compare the means of the two matched groups after achieving covariate balance using propensity score matching (Austin, 2008). The difference between the means is to reflect the average treatment effect (ATE). Using the same analysis, this study found that, on average, 46% of youth in the preventive detention group were sentenced to out-of-home placement, compared with 15% of youth in the

non-preventive detention group. The result was statistically significant ($p < .001$), suggesting that prevention detention increases the probability of being sentenced to out-of-home placement for youth adjudicated delinquent.

The *t*-test, though commonly utilized, is only one method of estimating the ATE. Because the samples were matched rather than randomly selected from a larger population (which is one assumption when using an independent sample *t*-test), subsequent statistical analyses should account for the matched nature of the study (Austin 2008). When the dependent variable is dichotomous, McNemar's test is the appropriate statistic to use (Austin, 2008; Guo & Fraser, 2010). The result of this test indicates whether there is a significant difference in the means between the two groups. The McNemar test yielded a statistic of 2.16 ($p < 0.05$), also suggesting that youth held in preventive detention had a higher likelihood of being sentenced to out-of-home placement than youth not held in preventive detention.

Hidden Bias

One area that is often missing from the empirical literature on detention and out-of-home placement is the effect of hidden bias. Even when using propensity score matching, the matched sample is balanced only on observed covariates. Randomized experiments balance both observed and unobserved covariates; propensity score matching does not achieve this goal. Therefore, researchers must assess the role of hidden bias in their studies. In other words, because a true experiment (i.e., one using randomization) is impractical in the real world, it is important to recognize that a statistically significant result may not reflect a real effect due to this bias; factors unaccounted for in the analysis could result in a statistically significant effect disappearing and becoming insignificant. Given the practical nature of this research area, policymakers and decision-makers should know whether research findings are sensitive to change due to bias. Hidden bias can be measured through a sensitivity analysis (Rosenbaum, 2002, 2005; Rosenbaum & Rubin, 1983).

Sensitivity analysis examines how "sensitive" the findings are to hidden bias. The smaller the value, the more sensitive the results are to hidden bias; the larger the value, the less sensitive the results are to hidden bias. Hidden bias is typically denoted by gamma (Γ), which determines what the unmeasured covariate would have to be to alter the results of the study (Guo & Fraser, 2010; Rosenbaum, 2002, 2005). When $\Gamma = 1$, a single significance level (*p*-value) is calculated, which is the initial finding from a randomized experiment (or matched sample analysis, such as in the current study). For every $\Gamma > 1$, instead of getting a single *p*-value, a range of *p*-values are calculated, reflecting a minimum *p*-value and maximum *p*-value. The Γ reflects uncertainty due to hidden bias, and as Γ increases, the interval becomes wider until it is no longer informative ($p > 0.05$). The sensitivity analysis, presented in Table 4, is based on the McNemar test.

Table 4. **Sensitivity Analyses for the Impact of Preventive Detention on Out-of-Home Placement: Range of Significant Levels for McNemar Test**

Γ (Gamma)	Minimum *p*-value	Maximum *p*-value
1.00	< .01	.000**
1.50	< .01	.000**
2.00	< .01	.000**
2.50	< .01	.004**
3.00	< .01	.037*
3.50	< .01	.147

* $p < .05$; ** $p < .01$

The hidden bias analysis indicates that at the standard *p*-value of 0.05, the results would be altered when $\Gamma > 3.0$. In other words, to attribute a higher probability of out-of-home placement to a factor other than detention, the unmeasured covariate would have to produce a threefold increase in the odds of out-of-home placement. This Γ value is fairly high, especially in the existing social science literature, allowing the finding

between detention and out-of-home placement to seem fairly robust (see, e.g., Apel, Blokland, Nieuwbeerta, & van Schellen, 2010; Becker & Caliendo, 2007).

Hierarchical Generalized Linear Modeling Results

I used hierarchical generalized linear modeling (HGLM) to further explore the impact of detention while controlling for structural variables. HGLM is an analysis that allows researchers to examine both structural- and individual-level factors at the same time on a particular outcome. Although the propensity score matching results provided strong evidence of a detention effect, multilevel modeling allowed for the examination of individual and structural factors appropriately (Hox, 2002; Raudenbush & Bryk, 2011). The structural factors included in the multilevel model are presented in Table 5.

Table 5. **Descriptive Statistics for Level-2 Variables**

Variable	Mean	SD	Min	Max
Juvenile delinquency rate	17.14	14.96	0.00	52.9
Index crime rate	21.16	12.19	4.50	58.65
Population density	112.23	109.40	9.70	447.40
Percentage Black	2.28	2.65	0.10	11.90
Percentage with high school diploma	71.89	10.91	21.60	83.80
Median income	28711.83	5155.34	16931	41994
Percentage of families in poverty	33.80	5.38	7.10	33.80

The full model of both level-1 and level-2 variables is presented in Table 6; all of the variables included in the model were grand-mean centered. The full model contains only "preventive detention" as an individual-level factor, since the level-1 covariates were successfully matched as a result of propensity score matching. However, I ran a model with the original level-1 covariates and the results were the same. The purpose of this analysis was to examine the role of preventive detention while accounting for structural factors. The result indicates that while controlling for structural characteristics, adjudicated youth held in preventive detention were more than five times as likely to be sentenced to out-of-home placement than those released before disposition.

Table 6. **Hierarchical Generalized Linear Model**

Fixed Effects	B	SE	Odds Ratio
Level-1 (individual)			
Preventive detention	1.71	0.32	5.51**
Level-2 (structural)			
Juvenile crime rate	0.02	0.02	1.02
Index crime rate	–0.05	0.02	0.95**
Population density	0.00	0.00	1.00
Percentage Black	0.20	0.06	1.22**
Percentage with high school diploma	0.02	0.01	1.02**
Median family income	0.00	0.00	1.00*
Percentage of families in poverty	0.17	0.08	1.19*
Intercept	–1.33	0.24	0.26**

* $p < .05$; ** $p < .01$

Table 7. **Cross-Level Interactions**

Interaction	B	SE	Odds Ratio
Preventive detention	1.52	0.33	4.56**
Preventive detention × Juvenile crime rate	–0.03	0.03	0.97
Preventive detention × Index crime rate	0.05	0.04	1.05
Preventive detention × Density	–0.01	0.00	0.99
Preventive detention × % Black	0.11	0.14	1.12
Preventive detention × % High school diploma	0.04	0.01	1.04**
Preventive detention × Median family income	0.00	0.00	1.00
Preventive detention × % Families in poverty	0.02	0.14	1.02

** $p < .01$

The final HGLM model (Table 7) examines cross-level interactions. This will test whether preventive detention has a different impact on out-of-home placement, based on the structural

characteristics. I included all variables in the model shown in Table 7, but only the cross-level interactions are presented (full models are available on request). There is only one significant cross-level interaction: Youth held in preventive detention in geographic areas with a higher percentage of residents with a high school diploma (or its equivalent) have an increased probability of being sentenced to out-of-home placement when adjudicated delinquent.

Discussion

The results from the propensity score matching indicate that being in preventive detention increases the probability of being sentenced to out-of-home placement compared with those not held in preventive detention. The multilevel analysis also shows that after controlling for structural factors, those held in preventive detention are more likely to be sentenced to out-of-home placement during disposition. These findings are consistent with the existing research in this area (Leiber, 2009; Leiber & Fox, 2005; Rodriguez, 2010; Secret & Johnson, 1997; Wu, 1997).

As stated earlier, the juvenile justice system is not made up of independent decision points, but is instead an interconnected system in which earlier decisions affect subsequent outcomes. Some may take the position that youth held in preventive detention are the more serious offenders, which would explain why they have a greater probability of out-of-home placement. However, this research statistically accounted for many of the factors associated with serious offending (e.g., prior record, offense type, felony versus misdemeanor, and so on). Therefore, offense seriousness is unlikely to explain this strong link between detention and placement.

It is possible, however, that other relevant juvenile court factors may explain the link between preventive detention and out-of-home placement. Because the juvenile court was designed based on the doctrine of *parens patriae* (Bernard & Kurlychek, 2010), it considers a multitude of factors in determining what is in the "best interests of the child," including the youth's amenability to treatment. In considering this, many "nonlegal" factors are relevant, such as school performance, resources for treatment, parental support, and so on. If youth who are adjudicated delinquent are unable to demonstrate amenability to treatment in the community, juvenile court judges may be more likely to sentence these youth to out-of-home placement to receive that treatment. These same factors may very well have contributed to the initial preventive detention decision.

The cross-level interactions from the multilevel model indicated a significant interaction between preventive detention and percentage of residents with a high school diploma. This is an interesting finding, because it suggests that youth held in preventive detention in geographic areas with greater percentages of people with high school diplomas have an increased probability of being sentenced to out-of-home placement when adjudicated delinquent than youth in geographic areas with lower percentages of people with high school diplomas. It may be that juvenile court judges are more "punitive" in geographic areas with a fairly educated population (those with a comparatively higher percentage of residents with at least a high school diploma). When adjudicated youth are held in preventive detention, judges may think they need to place these juveniles out of the home to increase the probability that these youth will continue their education through the mandated schooling they would receive. Judges may want to put these youth in an environment where they will receive the level of education (at a minimum) that is consistent with county norms.

Given the negative effects of detention, steps are being taken to provide some reform. The Annie E. Casey Foundation proposes a Juvenile Detention Alternatives Initiative, which has eight core elements:

- Collaborating with community stakeholders to plan, implement, and assess detention reform;
- Collecting and using data to make evidence-based decisions instead of using anecdotal evidence;
- Implementing objective admissions screening to decide who should be detained, who should be placed in an alternative program, and who should be sent home;
- Providing nonsecure alternative detention to those who would have otherwise been detained;
- Reforming case processing to shorten the time for cases to make their way through the system;
- Demonstrating flexibility with policies dealing with "special" cases, such as youth who violate probation (e.g., instead of automatically detaining those youth, assess whether they really do pose a risk to public safety);
- Persisting in addressing racial disparity in detention; and
- Monitoring confinement conditions intensely to assess safety and ensure appropriate care is provided. (Mendel, 2009)

Although it is clear that some youth should be held in preventive detention, paying particular attention to decision points such as detention—and basing decisions on empirical evidence—is likely to result in fewer stereotypes and biases influencing later decisionmaking.

Conclusion

This study helps to strengthen the existing body of knowledge about the long-term effects of preventive detention decisions by 1) minimizing the impact of selection bias through propensity score matching; 2) assessing the effect of unobserved/unmeasured covariates through a sensitivity analysis; and 3) using structural level factors through a multilevel analyses and examining the interaction between those factors and detention. The findings are consistent with those in the existing literature while adding new contributions to the literature through these techniques.

Although this study examined an entire state using both propensity score matching and multilevel modeling, it offers a strong foundation for future research. First, subsequent research should include additional covariates in minimizing the influence of selection bias. This study analyzed the role of hidden bias in the findings, but examining factors that may be relevant to both preventive detention and out-of-home placement can only strengthen the knowledge base surrounding this subject area. In addition, future research should continue using multilevel modeling in studying this issue. Too much of the existing literature is limited by failure to account for county-level differences in research.

In terms of practical solutions, this study provides some guidance for juvenile justice decisionmakers at all stages of the court process. Given that there are often multiple points in the process where a preventive detention decision is made (e.g., at intake, at a formal court hearing, and so on), those who are making these decisions should be aware of the effect their decisions have, especially in light of the strong empirical link between preventive detention and sentencing to out-of-home placement. Therefore, decisionmakers must understand that official decisions do not operate in a vacuum; what they do affects outcomes later in the juvenile justice process.

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Juvenile Justice 101: Addressing Family Support Needs in Juvenile Court

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KEY WORDS: Families, juvenile justice, juvenile court, parents

Abstract

Despite widespread acknowledgement that a youth's ecological context, particularly the family, is key in planning for the effective provision of services with the goal of reducing recidivism, the traditional court model largely neglects the family in the court process. Anecdotal evidence suggests that lack of awareness on the part of parents/guardians can lead to misunderstanding about court process, create frustration and tension, and compromise the needed engagement of families. Using a community-based participatory approach, we developed Juvenile Justice 101 (JJ 101) to address the concerns expressed by parents about the lack of support and information during this time. The program is currently operating through a family advocacy organization, Washington Dads, that contracts directly with the court. The centerpiece of the program is onsite peer support, in which Family Partners facilitate an orientation and provide one-on-one support to families at court. A preliminary study demonstrated that program participants were satisfied with the program and more knowledgeable about court processes as a result of their participation, although the research design could not establish causality. This article examines implications for program development and additional research needs.

Introduction

Juvenile courts have a complicated relationship with the parents (and guardians) of justice-involved youth. While they are often responsible for court fees and encouraged to accompany their child in court, parents have limited rights

in juvenile justice proceedings (Emerson, 2009). In addition, parents are often unfamiliar with the court process and are unaware of their role and those of other court personnel (Hillian & Reitsma-Street, 2003). This lack of awareness results, among other problems, in parental confusion about the role of the defense attorney. Because the juvenile court recognizes the youth and not the family as the only legal defendant, an attorney may be appointed to represent and guide a youth through court hearings. Meanwhile, parents are not provided formal support and may be excluded from some client/attorney meetings (Feld & Schafter, 2010). As attorneys are often the first contact for families, this exclusion and general lack of information about the process can be stressful and frustrating for guardians. Many juvenile courts also struggle to provide adequate legal representation for youth who are assigned overtaxed, and in some cases inexperienced, defense attorneys—a situation that can lead to additional frustration (Feld & Schaefer, 2010; Knitzer & Sobie, 1984). At the same time, family engagement is increasingly recognized as an essential part of achieving successful outcomes for youth (Friesen, Pullmann, Koroloff, & Rea, 2005; Huey, Henggeler, Brondino, & Pickrel, 2000) and, as a result, court funding is now often tied to the implementation of effective family-based treatment (Drake, Aos, & Miller, 2009).

Success in effectively engaging families in juvenile justice services, however, could potentially be undermined by misunderstanding and distrust bred in the initial phases of the court process. One promising strategy to address this confusion and frustration, which aligns well with similar programs in children's mental health services (Hoagwood et al., 2010; Koroloff, Elliott, Koren, & Friesen, 1996; Kutash, Duchnowski, Green, & Ferron, 2010), is to collaborate with parents of youth who have successfully been through the juvenile justice system to provide parent-to-parent support and information to those new to the court process.

The tension between juvenile courts and youth guardians derives, at least in part, from the stated mission of the first juvenile courts in the late 19th century. The establishment of the first juvenile court in Illinois in 1899 invoked the legal precedent of *parens patriae* ("parent of the nation") in adopting a paternal role toward the benevolent correction of wayward youth (Barrows, 1904). The doctrine of *parens patriae* gave the state nearly unilateral control over youth to provide protection and rehabilitation (Feld, 1993a). The implicit (or sometimes explicit) assumption was that all youth who came into contact with the juvenile court system had insufficient guardianship. Indeed, the stated intent of the creation of the juvenile court was "child saving," and probation officers were seen as wiser and more nurturing parental substitutes (Barrows, 1904; Platt, 2009). Consequently, the early courts initiated a process of focusing on the identified youth to the complete or substantial exclusion of the youth's family.

Over the next several decades, it became increasingly clear that the juvenile courts were not fulfilling the promise of protection and rehabilitation of *parens patriae*. There were several reasons for this, including the lack of training and education among juvenile court judges, the unchecked discretion regarding dispositions, and the lack of constitutional protections for youth who were being sent to institutions with the clear intent of protecting public safety rather than providing rehabilitation. Efforts to reform these practices ultimately led to the U.S. Supreme Court decision to extend due process protections to youth in delinquency proceedings (*In re Gault,* 1967). However, while instituting legal protections for youth was needed as a safeguard, this also had the effect of criminalizing the juvenile court so that its proceedings more closely resembled the adult criminal process (Feld, 1993b; Soulier & Scott, 2010). As in adult court, a single defendant (the youth) is the primary focus of the proceedings, and the defense counsel is legally obligated to represent the preferences of the youth.

Consequently, both the preserved tradition of *parens patriae* in the rehabilitative mission of the court, and the subsequent constitutional protections afforded youth, isolate the focus from the family to the child.

At the same time, the past 20 years have witnessed an increasing emphasis on evidence-based practice in treatment aimed at reducing recidivism and at-risk behaviors in youth. The most effective of these interventions with juvenile justice populations are aimed at addressing ecological factors and parenting skills (Greenwood, 1994; Lipsey & Wilson, 1998; Petrosino, Derzon, & Lavenberg, 2009). Ecology refers to the systems that surround youth in everyday life, including perhaps most importantly the family. Multisystemic therapy (MST), one of the most well known and widely disseminated programs for at-risk and offender youth, is built on the theoretical assumption (borne out by effective treatment results) that guardians/caregivers are a significant influence in changing problem behaviors in children and adolescents (Henggeler, Mihalic, Rone, Thomas, & Timmons-Mitchell, 1998). Other family-based interventions, such as Family Integrated Transitions (Trupin, Kerns, Walker, DeRobertis, & Stewart, 2011) and the systems of care strategies of Wraparound Planning (Pullmann et al., 2006) have also documented evidence of reducing recidivism. Six of the 11 programs listed as Model Programs in the Blueprints for Violence Prevention Initiative (n.d.) at the University of Colorado's Center for the Study and Prevention of Violence are either family interventions or involve parent training and/or parent reunification. Increasingly, juvenile courts are creating juvenile drug courts that are often more inclusive of families in treatment planning and may also request or order that parents attend parenting classes or other skills-building courses (Belenko, 2001; Butts & Roman, 2004). An international model that is beginning to find a foothold in the United States is the use of Family Group Conferencing as a diversion from formal court proceedings (Robbins, 2008). In this model, families are empowered to make and implement their own decisions through a family meeting open to all family members and key support personnel.

Despite widespread acknowledgement that the youth's ecological context (particularly the family) is key in planning for the effective provision of services and reduction of recidivism, the traditional court model largely neglects the family in the court process. This is particularly true of the early stages of initial hearings and judicial orders, in which the youth is represented and advised by an attorney while the family is left with little formal guidance or support. When parents have been the subject of policy or legislative focus, it has more often been to hold guardians legally accountable for youth behaviors than to provide support to address the needs of parents (Lieb, Fish, & Crosby, 1994). Compounding this lack of guidance for parents are the challenges of potential language and culture barriers, court fees, and the collateral consequences of adjudication for an entire family, including potential eviction from subsidized housing (American Bar Association, 2012). It is clear that juvenile courts must address the information and support needs of guardians in juvenile court proceedings to a greater degree. Neglecting this task can result in misunderstandings about the role and function of court personnel, the rights and responsibilities of guardians, and the consequences of noncompliance, ultimately leading to escalating distrust and hostility. The impact of these consequences has not yet been rigorously studied, although a study of justice-involved families is currently being conducted by the national advocacy group Justice for Families (n.d.). Anecdotal evidence collected as part of our involvement in a family-driven support project in juvenile court, Juvenile Justice 101 (JJ 101), suggests that early misunderstanding and distrust can, at a minimum, negatively affect court climate, compliance with court orders, and family engagement. However, parent-to-parent support could be a promising strategy for educating, engaging, and supporting parents in the court process.

The theoretical underpinnings of parent-to-parent support are grounded in social support and empowerment theory (Davis, Gavazzi, Scheer, & Uppal, 2011), which overlaps closely with the work of Gaventa and Cornwall (2001), who offer two types of knowledge and power undervalued in traditional academic research but important for program success and social change (Pullmann, 2009). These include *relational knowledge*, which derives from a sense of common understanding and shared experience, and *reflective knowledge*, which is a person's awareness of and ability to reflect and act upon personal struggles in a broader social context. Peer-delivered support, through the development of relational and reflective knowledge, is tied to feelings of social support, empowerment, and ultimately goal attainment. In addition, to parents, parent-delivered support is thought to be uniquely credible and trustworthy, compared with professionally delivered support services (Gyamfi et al., 2010; Koroloff et al., 1996; Munson, Hussey, Stormann, & King, 2009).

In practice, family support programs have been found to consist of five overlapping types of activities: 1) informational and educational support, 2) instructional and skills development, 3) emotional support, 4) instrumental and concrete support, and 5) advocacy (Hoagwood et al., 2010). These activities directly contribute to some of the theoretical and established benefits of parent-to-parent support, including increased engagement, improvements in program persuasiveness and trust, participant retention of program material, individualization of support, reductions in caregiver stress, self-care, empowerment, enhanced sense of self-efficacy among caregivers, and improved child outcomes (Brister et al., 2012; Kutash et al., 2010; Robbins et al., 2008; Rodriguez et al., 2011; Santelli, Turnbull, Sergeant, Lerner, & Marquis, 1996; Wisdom, Olin, Shorter, Burton, & Hoagwood, 2011). A review of the literature on parent-to-parent programs for parents of children in physical and mental health programs noted that, overwhelmingly, parents found these support programs helpful and valuable (Robbins et al., 2008). Unfortunately, with the exception of increased empowerment and reduced caregiver stress, many of the outcomes listed here are not well established, because most parent-to-parent support programs do not collect outcomes data or do so using inadequate research methods (Davis et al., 2011; Hoagwood et al., 2010). Other supportive evidence can be found in peer-delivered services in adult mental health, which have reported consistently positive outcomes (Doughty & Tse, 2011).

JJ 101 is a program we developed specifically to address the voiced concerns of youth and guardians about the lack of support and information in the initial court phase of the juvenile justice process. The development process was funded by a grant from MacArthur Foundation Models for Change through a specific family and peer support initiative in Washington State and was implemented in King County Juvenile Court. The name "Juvenile Justice 101" was inspired by a similar program operating in Dependency Courts in some Washington State jurisdictions; however, the unique needs of families in the juvenile court required a specialized approach. The program is innovative for juvenile court both in its focus on family and community engagement during the development phase, as well as in the provision of onsite support and community outreach using a peer-support model.

The Development of Juvenile Justice 101

Program Design and Implementation

We used a community-based participatory approach in developing JJ 101 (Minkler & Wallerstein, 2002). The design, implementation, monitoring, and modifications to JJ 101 occurred under the supervision of an advisory stakeholder group made up of parents and guardians, youth, court administration, probation and detention staff, court services staff, defense attorneys, university partners, and mental health representatives. The planning process and groundwork

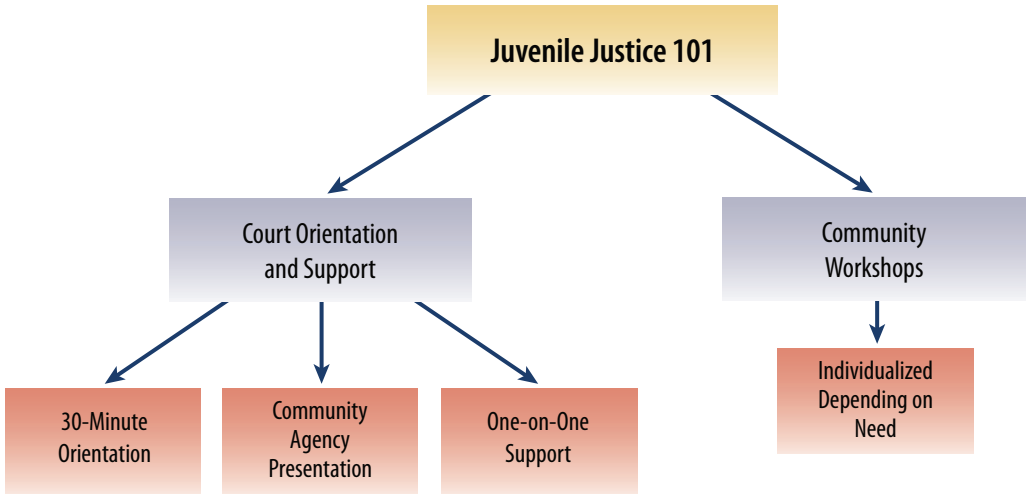
for the program began with a meeting of parents and youth who had experience with the justice system. Participants came from several local support organizations for families with youth who had severe emotional or behavioral problems. In this initial meeting, attendees shared their experiences in the juvenile justice system and identified substantive gaps and potential strategies for closing these gaps through policy and practice changes. The initial court phase of the process was identified as a critical intervention point at this meeting.

We held subsequent oversight committee meetings with the larger stakeholder group to narrow the aims and define the products for the program. Developing the program within the oversight committee framework proved critical. Wariness among some court staff about working with family advocates, as well as concerns from defense attorneys that a support program could violate legal boundaries, were substantial barriers in the initial phases of development. Acting as an outside facilitator, the University of Washington faculty mediated between veteran parents/guardians and court personnel to develop the appropriate role of Family Partners in JJ 101—that is, parents familiar with juvenile court processes who mentor parents currently navigating the system. Meetings occurred approximately every 6 weeks for 1 year until the launch of the program. Since implementation, the oversight group has met quarterly to review progress, troubleshoot concerns, consider sustainability strategies, and examine avenues for expanding the program. In addition, following a 2-month pilot phase, program management shifted from University of Washington staff to a family advocacy organization that now contracts directly with the court to provide services.

The Juvenile Justice 101 Program

The JJ 101 program includes an onsite support component and community outreach activities (Figure 1). The onsite component begins with two Family Partners facilitating a 30-minute orientation in the court waiting room before the court hearings begin. Family Partners undergo a 6-hour training program after they are hired and before they begin working in the court. The peer support model is a core feature of the program. Applying lessons learned from the consumer and family-driven movements in the mental health field (Solomon, 2004), the program assumes that parents who have already been through the juvenile court process with their own children will be able to reach out to and support other parents with the greatest impact. In the planning phases of development, the oversight team weighed the benefits of providing a smaller number of justice-involved families with in-depth, ongoing support,

Figure 1. **Juvenile Justice 101 Program Components**



as opposed to offering a greater number of families more basic information and support services at court. Because King County has various other parent support resources, the planning team opted for wider reach while providing information for ongoing support services to families on an as-needed basis.

Staff members who conduct probation screening tell guardians about the JJ 101 orientation when they call a family to inform them that a youth has been brought into detention. The schedule for JJ 101 is also posted on the court Web site, and information desk staff let families know about the orientation as they check in. The timing of the orientation is designed to engage families as they arrive for court hearings and before hearings begin. In the orientation, the Family Partners show a video describing the roles of court personnel (attorneys, judge, and probation staff) and present a resource booklet that includes information about the court as well as community resources. The resource booklet is intended to empower guardians and youth to interact proactively with the court process and includes space for individuals to write upcoming court dates, questions for the attorney/probation officer, and names/phone numbers. In addition, the booklet includes examples of the kinds of information to provide the probation officer and/or judge, as well as a youth behavior log sheet. This interactive material is accompanied by general information about the court process, definitions of key terms, and a resource list of community services. The booklet has also been translated into Spanish, Somali, and Vietnamese.

Following the 30-minute orientation, community agency representatives are invited to give a short presentation of their agency's services. Invited agencies offer mental and behavioral health services, support for victims of domestic violence and assault, legal advocacy, and low-income assistance. The Family Partners then approach individuals in the waiting room, one on one, to offer additional support and address any further questions or needs they may have. Family Partners also provide information about family support options in the community to those families who express interest in ongoing support. In addition, the Family Partners maintain a resource table well stocked with community agency information to address a variety of needs.

Another component of JJ 101 involves providing workshops in the community on the juvenile justice process. These workshops, typically conducted in cultural and neighborhood community centers, serve to inform members of the community about the juvenile justice process as well as to recruit potential Family Partners for the onsite court support program. Each of the program's components—including the orientation presentation, resource booklet, connection to community resources, and one-on-one conversations—are specifically designed to address the concerns and needs expressed by parents and other partners who served on the oversight committee. JJ 101 helps parents and youth understand their rights, responsibilities, and appropriate roles, and provides them with tools to improve their communication with attorneys, the court, and probation staff. The program gives parents new tools to facilitate the monitoring of their child's behavior. For those who need more intensive help, JJ 101 offers information about community-based support and assistance.

We conducted this study to better understand process elements related to JJ 101, including satisfaction, increased knowledge of community resources, intent to follow up with resources, and knowledge of the juvenile court process.

Method

Sample

The study sample consisted of 111 individuals, either youth or guardians, who were onsite at the juvenile court building for court hearings on one of the 11 days for which data were collected. The sample was primarily English speaking (84.7%)

and fairly evenly split between youth (45.9%) and parents (54.1%). More females than males were represented (64% vs. 36%). Approximately one-third of the sample identified as Caucasian non-Hispanic (35.1%), followed by African American (27.9%), Hispanic (16.2%), Asian (2.7%), Pacific Islander (1.8%), Native American (2.7%), and Other (13.5%). This distribution is representative of the ethnic distribution of cases seen in the juvenile court. For the purposes of our analysis, Asian, Pacific Islander, and Native American respondents were included in the Other category due to small sample size. Table 1 compares the distribution of the sample across demographic categories for JJ 101 participants and nonparticipants (comparisons). Individuals self-select to participate in JJ 101 and must go to a certain part of the room to see the orientation video and related materials, so those who did not see the orientation were included in the comparison group, even though they may have been in the same room as those participating in the orientation. Because the orientation occurred in an area of the room where the video could not be seen by those who did not participate, there was little if any risk of nonparticipants picking up information unintentionally from the presentation.

There were 53 JJ 101 participants and 58 comparisons in the sample. Individuals were counted as JJ 101 participants even if they viewed only a portion of the orientation and if they had seen it previously but not that day. The JJ 101 and comparison groups were similar on most demographics. The only significant differences between the groups were the greater proportion of JJ 101 participants who had already attended their court hearings for that day (38% vs. 17%; chi-square = 6.04, $p = 0.01$) and the number of previous court hearings for each group: JJ 101 participants had more previous court hearings than those in the comparison group (gamma = 0.38[1], $p = .01$).

Procedure

Data collection occurred onsite at the juvenile court while court-involved youth and their guardians awaited or completed court hearings. Two trained interviewers arrived about 30 minutes after the completion of a scheduled JJ 101 orientation to interview families who were still in the court lobby. The interviewers went to the court after each scheduled orientation 3 days a week, twice in the afternoon and once in the morning, over the course of 4 weeks. Interviewers approached youth and families using a standard script about the voluntary nature of the study and the use of the data. Individuals who completed most or all of the interview were given a gift card worth $10 at a local Target or Walmart store. Rates of refusal were not formally recorded, but the refusal rate was low. In some instances, participants would leave the interview to attend a court hearing and return to the interviewer to complete the survey after the hearing was over.

Table 1. **Sample Demographics by JJ 101 Participation**

		JJ 101 Participant			
		No		Yes	
		n = 53	%	*n* = 58	%
English Language	Yes	44	84.6%	50	86.2%
	No	8	15.2	8	13.8
Parent	Yes	27	50.9	33	56.9
	No	26	49.1	25	43.1
Gender	Female	35	66.0	36	62.1
	Male	18	34.0	22	37.9
Race	Black	16	30.2	15	25.9
	White	16	30.2	23	39.7
	Latino	12	22.6	6	10.3
	Other	9	17.0	14	24.1
Already Attended Court Hearing Today	Yes	**9**	**17.0**	**22**	**37.9**
	No	**44**	**83.0**	**36**	**62.1**
Previous Court Hearings	First Time	10	18.9	7	12.1
	2–5 Times	32	60.4	25	43.1
	6–10 Times	8	15.1	18	31.0
	10 + Times	3	5.7	8	13.8

Bold indicates a significant difference at $p < .05$.

Measures

Helpfulness of JJ 101. Due to the lack of existing tools to measure knowledge and perceptions of the parents regarding the court process, we developed our own questionnaire to assess these domains. The questionnaire we used for the study consisted of two sections. The first section included questions about the JJ 101 orientation; we did not administer this questionnaire to the comparison group. We asked those who participated in JJ 101 about how helpful the orientation was, what they learned, whether they were contacted personally by a Family Partner, how helpful the Family Partner was, whether they learned about a new community service, and how likely they would be to follow up with that service. All questions were either yes/no, scaled from 1 to 5 (with 5 being highest), or open ended. The open-ended questions in the first part of the survey asked those in JJ 101 to describe what they had learned from the orientation. We grouped responses into categories based on similar themes, with multiple themes coded per person.

The second part of the questionnaire asked all survey participants to rate their agreement with 11 questions from "not at all" to "a lot" (on a 5-point scale, with "a lot" being a 5). The questions measured attitudes toward the court as well as perceived and actual knowledge of court processes.

Court Support. We combined seven of the court perception variables into a "Court Support Scale." Table 2 shows the factor loadings of each item within the scale. To develop both scales, we conducted a principal components analysis (PCA) with Varimax rotation with 10 of the 11 items (the item testing actual knowledge was excluded). We used PCA to find the optimal subsets of items within the full scale that described distinct constructs (Abdi & Williams, 2010). The seven items included in the Court Support Scale measured the confusion, anger, and perception of guardians regarding court help and support. We coded the scale so that higher scores indicated a greater sense of support. Inter-item reliability as measured by Cronbach alpha was good (alpha = 0.84).

Table 2. **Helpfulness Ratings of JJ 101 Orientation by Demographics**

		n	Mean	*SD*	F (df)	Eta sq
English-Speaking Participant	Yes	43	2.74	0.28	0.39(48)	0.01
	No	6	2.50	0.55		
Parent	Yes	27	3.00	0.92	**6.97(48)**	0.13
	No	22	2.36	0.73		
Gender	Female	31	2.74	0.95		
	Male	18	2.67	0.77	0.08(48)	0.00
Race	Black	15	2.87	0.99		
	White	18	2.78	0.88		
	Latino	6	2.50	0.84		
	Other	10	2.50	0.85	0.47(48)	0.03
Previous Court Hearings	First Time	7	2.86	0.90	0.70(48)	0.04
	2–5 Times	23	2.52	0.85		
	6–10 Times	14	2.86	0.95		
	10+ Times	5	3.00	1.00		
How Much Was Helpful	Less than 15 Minutes	11	2.18	0.87	3.39(48)	0.13
	15–20 Minutes	13	3.08	0.64		
	All of It	25	2.76	0.93		

Bold indicates $p < .05$

Court Knowledge. We combined three items into a "Court Knowledge Scale" that measured the perceived knowledge of participants rather than their actual knowledge. This scale is made up of three items: 1) what participants believe they know about the role of court staff, 2) who participants think they should talk to at court to get more information, and 3) whether participants have a good understanding of the court process. Table 2 displays the factor loadings for each item on the scale. Inter-item reliability as measured by Cronbach alpha was acceptable (alpha = 0.75). We coded the scale so that higher scores indicated greater perceived knowledge of court processes. A final question tested what actual knowledge participants had of the court process: "The primary role of the defense attorney is to consult

with the parent about the youth's case." This was dummy coded into "correct" and "incorrect," with only the response "not at all" counting as a correct answer.

Table 3. **Coded Categories of What Participants Learned in JJ 101 Orientations**

	Parents ($n = 33$)		Youth ($n = 24$)	
	n	%	*n*	%
Court Hearings	2	6.3%	1	4.2
Court Process	11	31.3	0	0.0
Generally Helpful	3	9.4	3	12.5
Terms	0	0.0	3	12.5
Rights	0	0.0	1	4.2
Who to Talk To	2	6.3	2	8.3
Roles of Court Personnel	3	9.4	3	12.5
What to Do	4	12.5	2	8.3
Don't Remember/Nothing	6	18.8	8	33.3
Detention	2	6.3	1	4.2

Results

The distribution of responses to the helpfulness question was slightly right-skewed; only three participants rated the presentation as "not at all" helpful (6.1%), 19 rated it "a little" helpful (38.8%), 16 rated it "more than a little" helpful (32.7%), and 11 rated it "a lot" helpful (22.4%). Analyses of covariance (ANCOVAs) predicting ratings of the helpfulness of JJ 101 by demographic groups (see Table 2) resulted in significant effects only for parent/youth status; that is, parents had higher mean scores than youth on ratings of helpfulness.

Codes based on the open-ended responses to what we learned in the orientation were stratified by parents and youth. Table 3 displays the coding for these open-ended responses, and Table 4 provides a sample of direct quotes from respondents. Due to low cell sizes across the multiple themes, we report these findings in terms of trends rather than statistically significant differences.

Table 4. **Sample of Participant Responses about Information Received from JJ 101**

What Participants Learned from Juvenile Justice 101 Orientation	
Parents/Guardians	**Youth**
• Who to talk to. • To ask questions and there is lots of help if you need it. • Better explained the court process. • Biggest thing that attorney is available. Didn't know that. • Booklet was very helpful. • How the court system works. • How to dress in court. Tell court how child is doing. • How to talk to the judge, and if and when she gets on probation I'll know what to do. • How to talk to the youth. • I learned a little bit about court process. • I was too mad to listen. • Kids are taking care of [in detention] so don't worry. • Learn more how to participate with my child in detention. • Learning about the process. To know what next and what I should be looking for. • Make journal [of youth's behaviors]. • Don't have to be at the hearing every time. • That youth get a lawyer and that you have to wait a long time. • The lawyer talks more with kids than us. • The roles of the judge and attorneys.	• Case setting is where you talk to your lawyer. • Dress code. • If you have any questions, ask. . . . • It tells you how to deal with your situation. • Juvenile court is not the place to be. • Learn new words PDA/TDA. • Learned what terms mean, deferred disposition, arraignment, etc. I didn't even know what the lawyers were saying. • My mom can bring me my meds if I go to detention. • Parents don't have rights. • People around here are helping kids to keep them out of trouble. • Real-life experiences. • Roles of court staff and court terms. • That the court isn't as bad as everyone thinks it is. • That the lawyer is for my benefit. • That we are not alone; there are people here to help. • What the attorneys do and different positions of people who are here to help.

A relatively high proportion of parents reported that they learned about the overall court process, while youth tended to be more specific in their responses.

Community Organizations

We asked JJ 101 participants whether the orientation exposed them to a community service or organization that was new to them, and how likely they would be to follow up with this organization. Of the 53 participants who answered, 19 said they had learned about an organization that was new to them (37.7%) and 34 said they had not (62.3%). The most common type of organization reported was peer-led, family support services. This was not surprising, considering that most of the Family Partners represented one of several family support organizations. Of participants who reported they learned about an organization for the first time, African Americans were more likely (with statistical significance) than those in other ethnic groups to say they would follow up. Table 5 displays the means and statistical significance levels for ANCOVAs conducted with different demographic categories. All of the African American respondents ($n = 6$) reported that it was "more than a little" or "a lot" likely that they would follow up with services, whereas 80% of White respondents said that they were "not at all" (20%) or "a little" (60%) likely to follow up. There were too few respondents in the Latino or Other categories to report any findings.

Table 5. **Likelihood of Following Up with Community Resources**

		n	Mean	*SD*	F (df)	Eta sq
Parent	Parent	15	2.73	1.10	1.53(18)	0.08
	Youth	4	2.00	0.82		
Gender	Female	14	2.64	1.08	0.18(18)	0.01
	Male	5	2.40	1.14		
Race	Black	6	3.50	0.55	**3.89(18)**	0.44
	White	10	2.20	1.03		
	Latino	1	3.00			
	Other	1.5	2.00	0.71		

Bold indicates $p < .05$

Court Support and Court Knowledge

Because of the observed differences between parents and youth in the reported helpfulness of JJ 101, we hypothesized that parents and youth might also differ with respect to their levels of perceived support and perceived knowledge of court processes. We conducted univariate analysis of covariance models accordingly, with parent/youth status and JJ 101 participation as fixed effects, and the propensity to participate in JJ 101 as a covariate.

We developed and included a propensity score regression model because of differences between JJ 101 participants and nonparticipants as to whether they had attended court that day and had previous court experiences. Propensity score regression adjustment is a method for adjusting differences between treatment and control groups on known demographics to balance the groups statistically (Luellen, Shadish, & Clark, 2005; Rosenbaum & Rubin, 1984). The score is created by running a logistic regression with the selected demographics and using treatment/control status as the dependent variable. Independent variables included race (dummy coded), previous times at court, parent/youth status, English speaking, and whether respondents had attended court that day. We saved subject-level predicted probabilities from the logistic regression as propensity scores. We then split this scale into quintiles according to standard recommendations for testing how well the scale balanced the treatment/control groups (Rosenbaum & Rubin, 1984). We tested the five quintile groups individually using univariate analyses to see whether there were any demographic differences between treatment and control groups. We found no differences in our scale; this indicated that the propensity scores were providing adequate control for the included variables. The scale we then used in the analyses was the categorized quintile scale.

The ANCOVA model looking at court support as the dependent variable found no significant

differences between parents (*m = 2.61, SD = 0.87*) and youth (*m = 2.83, SD = 0.64*) or between JJ 101 participants (*m = 2.65, SD = 0.73*) and the comparison group (*m = 2.79, SD = 0.83*) in perceived levels of court support (Figure 1).

When running the same model with perceived level of court knowledge as the dependent variable, we found the interaction between parent/youth and JJ 101 participation status to be significant ($F[109] = 6.10$, $p < 0.05$). We found no main effects for JJ 101 participation or parent/youth status. Youth in the comparison group rated their knowledge of court functions lower (*m = 2.93, SD = 0.87*) than youth participants (*m = 3.40, SD = 0.56*), whereas parents in the comparison group rated their court knowledge higher (*m = 3.06, SD = 0.96*) than parent participants (*m = 2.75, SD = 0.89*). Parent JJ 101 participants had the lowest ratings of perceived court knowledge overall (Figure 1).

The final question in the scale, about the role of the defense attorney, was intended to measure actual rather than perceived knowledge of court process. To test this, we ran a logistic regression with the defense attorney question as the dependent variable and an array of covariates, including the propensity score. Participation in JJ 101 was positively related to a correct understanding of the role of the defense attorney, although the effect only approached statistical significance ($p = .09$). JJ 101 participants were nearly three times more likely to provide the correct answer to this question than nonparticipants (odds ratio = 2.91), which was larger than the effect for previous times at court (odds ratio = 1.35). Youth were half as likely as parents to answer this question correctly (odds ratio = 0.50). Being a male parent (father) was most strongly related to answering correctly (odds ratio = 10.76) (Table 6).

Table 6. **Logistic Regression with Correctly Answered Defense Attorney Question as Dependent Variable**

	B	S.E.	Wald	Exp(B)
JJ 101 Participation	1.067	.622	2.946	2.907
Youth	2.989	.908	10.849	**.050**
Male	2.376	.871	7.431	**10.756**
Previous Court Visits	.301	.369	.664	1.351
English Speaking	.922	.705	1.710	2.515
Propensity Score	.072	.232	.096	1.075
Constant	−3.098	1.434	4.667	.045

Bold indicates $p < .01$

Discussion

The court phase of the juvenile justice process is often a confusing, overwhelming, and frightening period for the guardians of justice-involved youth (Hillian & Reitsma-Street, 2003). Although youth are at least nominally provided an advocate through the defense attorney, guardians often have no source of information or support during this phase. Furthermore, youth often lack basic knowledge of court terms and process (Bonnie & Grisso, 2000). Many justice-involved families are also burdened by physical health, mental health, and dependency concerns that add to the stressors of court involvement (Skowyra & Cocozza, 2006). JJ 101 is a family- and youth-driven program intended to close the information and support gap for families during the initial phase of the juvenile court process. The purpose of this study was to explore preliminary process outcomes related to participant satisfaction, and to evaluate participant knowledge of community resources and self-perceptions of court support and court knowledge. The results indicate parent participants were highly satisfied with the program, but youth were less so. In addition, the study found a modest percentage of participants learned about a new community resource, typically a family support organization. Finally, the study found JJ 101 positively influenced the acquisition of knowledge about the court process.

Parents, more than youth, appeared to benefit from the program. Average ratings of satisfaction were higher among parents than youth, and more parents responded that they learned something from the presentation. It is not surprising that the program in its current form is more attractive to parents/guardians than it is to youth. First, Family

Partners are themselves veterans of the court process but differ in their ability to effectively engage youth. Second, the lecture-style orientation would be expected to be more attractive to adults than to youth. An earlier study on improving youth knowledge of court process found that youth were more receptive to learning from a video than from an adult lecturer (Cooper, 1997). Despite this, a subgroup of youth in our present study did find the orientation helpful and, among these youth, responses to the question "What did you learn?" were very specific.

Our findings suggest that the format of JJ 101 could be adapted to make it more youth friendly, or expanded to include youth-delivered peer support (Matarese, McGinnis, & Mora, 2005; Prilleltensky, 2010). Our findings also suggest that youth may need a more engaging format to learn about the justice system, since they were half as likely as parents to answer a question about the role of the defense attorney correctly. Although this needs to be explored more thoroughly in subsequent studies, the fact that youth rate their knowledge of court process higher than that of parents while their demonstrated knowledge is lower indicates their problem with accurate self-appraisal. Extensive literature indicates youth's lack of competence to stand trial due to their lack of knowledge about court terms and procedures; youth consistently score below threshold on measures designed to gauge adult competency (Bonnie & Grisso, 2000; Cooper, 1997; Grisso, Steinberg, Woolard, et al., 2003).

Some argue that the standard for competency should be lower for juveniles, given the relatively less serious consequences of juvenile court adjudication (Bonnie & Grisso, 2000; Grisso et al., 2003). However, states vary in the degree to which youth are protected in juvenile court (e.g., whether juvenile records are sealed, whether juvenile courts provide graduated sanctions, and whether there are eligibility requirements for placement). Given the fairly serious collateral consequences of juvenile court adjudications for some youth, the question of competency is a significant issue for juvenile proceedings (American Bar Association, 2012). A program such as JJ 101, adapted to be more youth friendly, could be a helpful strategy in educating youth more fully about the process and consequences of juvenile court actions.

An intriguing finding from our study was that JJ 101 participants did not differ from nonparticipants in their ratings of perceived court support. Due to the simple study design, we were unable to determine whether the program simply did not affect perceptions of support, or whether the potentially lower perceptions of support among participants before the orientation rose to the same levels as those of nonparticipants after it. However, parents participating in JJ 101 scored significantly lower on perceived court knowledge than all youth and nonparticipating parents. There are two possible explanations for this finding. First, parents participating in this orientation may have realized how complicated the court process can be and consequently rated their knowledge more accurately on the survey. This would be consistent with other research, which shows that training improves the accuracy of self-assessment for knowledge and competency (Dunning, Heath, & Suls, 2004; Kruger & Dunning, 1999). Alternatively, the orientation may attract parents who feel less knowledgeable about court process. The fact that participating parents were more likely to answer a question about court process correctly than other groups suggests that the orientation is effectively communicating essential information to participants, regardless of self-ratings of knowledge. Additional research will need to employ a more sophisticated design to tease out the effects of potential self-selection from the effects of more accurate appraisals of knowledge.

One implication of improved knowledge of court process for both guardians and youth is improved court climate (via reduced confusion and the potential for conflict), as well as better compliance with court process, including being present for hearings and complying with court orders. In

many cases, youth rely on guardians to help them navigate the court experience, including contacting the defense attorney, attending hearings, and completing paperwork (Cooper, 1997; Woolard, Cleary, Harvell, & Chen, 2008). Consequently, educating guardians about the court process should be viewed as an important element of encouraging youth compliance. In addition, JJ 101 has the potential to significantly improve court climate by reducing confusion, fostering support, and introducing a focal point through the orientation. Anecdotal evidence from the demonstration site indicates the orientation is improving court climate by reducing the number of hostile interactions, reducing the number of guardians and youth seeking information from court support staff, and improving relationships with defense attorneys. As a court services manager from this site reported: "JJ 101 has been invaluable in providing the families and youth with information and reassurance when facing court hearings and the juvenile justice system. When JJ 101 Family Partners are not present in the lobby, there is an obvious void replaced by frustrated, confused, angry, and aggressive parents."

As with most multicomponent programs, it is not yet clear which core elements of the program may be influencing desired outcomes. Many people who hear about JJ 101 are interested in implementing something similar, but without Family Partners. Recruiting, training, supervising, and funding Family Partners is admittedly an involved process; however, this appears to be a crucial piece of the program. Having Family Partners onsite at the juvenile court represents a significant shift toward applying the lessons learned from consumer- and family-driven services in mental and behavioral health. The philosophy behind the system of care for children's mental health, for instance, has endorsed family involvement in supports and services for more than 25 years (Stroul & Friedman, 1994). Although ethical arguments can be made that involving citizens in mutual aid (such as parent-to-parent support) is simply the right thing to do to promote social justice and healthy communities (Arnstein, 1969; Friesen & Stephens, 1998; Pullmann, 2009), it is also reasonable to assume that parent-to-parent support provides immediate and tangible benefits compared with support from professionals who do not share the experiences of these parents (Hoagwood et al., 2010; Munson et al., 2009; Robbins et al., 2008). These benefits might include being role models for success, providing hope, translating jargon, navigating the juvenile justice system, promoting empowerment, and building trust (Munson et al., 2009).

Involving parents as natural supports in the field of children's mental health required a paradigm shift away from research and practice that blamed parents for their child's problems and toward embracing parents as partners in supporting their child's development and recovery (Friesen et al., 2005; Osher & Osher, 2002; Osher, Penn, & Spencer, 2008). This was the result of bottom-up pressure from grassroots organizations and sympathetic academics, and top-down pressures from Federal funding sources (Pullmann, 2009). The juvenile justice system needs such a paradigm shift, which will require strong leadership at the Federal, state, and local levels. Perhaps because of the historical vestiges of *parens patriae*, the juvenile justice system traditionally leaves parents out of the process, even though parents are vital to ensuring youth's success. By welcoming parents into the court to support other parents, the juvenile justice system makes a strong statement about their importance.

Limitations

The present study is intended to be preliminary examination of the satisfaction and potential outcomes of JJ 101. As such, we cannot yet draw conclusions regarding actual changes in knowledge or perceived support as a result of participation in the program. Furthermore, because the program now operates in only one location, any responses to the study survey will be colored by the context of both that court and that county.

Consequently, our ability to generalize results to other jurisdictions is limited. Also, although the comparison group was probably not directly affected by the orientation, it is possible that because they attended court on the same day as JJ 101 participants, court climate and other factors affected the orientation and could have influenced the responses from comparison group members. Future research should observe a comparison group on days that JJ 101 orientation is not being presented and study JJ 101 at other court sites. Additional research on longer term outcomes associated with the program, including knowledge of and compliance with court orders, would also be useful.

Conclusion

Parents and guardians of youth in juvenile court can benefit from needed support and information. JJ 101 applies lessons learned from the mental and behavioral health fields to provide this service through parental peer-to-peer support. The results of the present study offer preliminary evidence that the program is perceived as highly useful, particularly by parents, and is contributing to improved knowledge of court process and community resources. Future research efforts will focus on measuring changes in longer-term perceived support and knowledge, successful connections with other community-based services, court climate, and compliance with judicial orders.

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The Influence of Race on Preadjudication Detention: Applying the Symbolic Threat Hypothesis to Disproportionate Minority Contact

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KEYWORDS: disproportionate minority contact, preadjudication detention, symbolic threat, juvenile justice

Abstract

This article presents the results of a hierarchical linear model (HLM) analysis in which structural disadvantage at the county level, along with incident-level characteristics, are examined to determine whether the symbolic threat hypothesis offers any explanation for disproportionate minority contact (DMC) with the juvenile justice system. The decision point examined is length of stay in preadjudication detention. Results indicate that minority juveniles are detained for longer periods of time than their White counterparts, even while controlling for incident characteristics. Moreover, minorities who live in communities characterized by structural disadvantage are detained longer than their White counterparts, and longer than minorities in more affluent counties. This research supports the use of the symbolic threat hypothesis as a theoretical framework for examining DMC, as well as for offering possible interventions to reduce this phenomenon.

Introduction

The United States has historically struggled with disproportionality in issues of race and justice. Minority citizens often are negatively affected when formal social controls are used against them through the justice system (Bridges & Steen, 1998; Tittle & Curran, 1988). To better understand the issues of race and justice concerning juvenile offenders, in 1992 the Office of Juvenile Justice and Delinquency Prevention (OJJDP) made examination of disproportionate minority contact (DMC) a core requirement of the Juvenile Justice and Delinquency Prevention Act (JJDPA). DMC

is evident in a jurisdiction when the percentage of minority youth in the juvenile justice system exceeds the percentage of minority youth in the population (McCarter, 2011).

Despite Federal and state efforts to reduce the proportion of minority youth who have contact with the juvenile justice system, these youth continue to be detained at rates greater than their White counterparts (Harms, 2003; Knoll & Sickmund, 2010; Leiber, 2002; Pope, Lovell, & Hsia, 2002; Snyder & Sickmund, 2006). In 2007, official data on juvenile arrest showed that although African Americans younger than 18 accounted for only 17% of the population, they accounted for 51% of arrests for juvenile violent offenses and 32% of arrests for property offenses (Puzzanchera, 2009).

When minority youth are taken into custody and detained at early stages of juvenile proceedings, they have more negative outcomes at later points of contact, particularly disposition and placement (Bishop & Frazier, 1996; Feld, 1991; Leiber & Fox, 2005). Understanding the indicators of disproportionate system involvement for minority youth is an important step in addressing this issue.

Various strategies have been developed to identify DMC across jurisdictions. One such process is the calculation of the Relative Rate Index (RRI). The RRI is a means of comparing rates of juvenile justice contact across system points that consider the proportion of each racial minority group at each point compared with that group's representation in the population, or the decision point immediately preceding the point under study (Feyerherm, Snyder, & Villarruel, 2009). For example, to calculate the RRI for arrest, the number of juveniles arrested in a particular racial group is divided by the number of juveniles in that racial group in the population. The ratio of White to minority group contact is then calculated by dividing the minority group contact by the White group contact; the closer the ratio is to 1, the less disparity there is. The most recent analysis available identifies the RRI for detentions on the national level as 1.4, indicating that detention rates for Blacks was 40% greater than that for Whites (Puzzanchera & Adams, 2012). Although calculation of the RRI gives policymakers and practitioners a starting point for understanding whether DMC exists, the RRI does not identify causes, explanations, or strategies for overcoming DMC (Parsons-Pollard, 2011). The OJJDP DMC initiative has increased the number of studies investigating minority overrepresentation, but the data are still incomplete and inconsistent (McCarter, 2011). Most studies have been descriptive in nature and provided little instruction on how to address the problem (Piquero, 2008). Research has been focused on whether DMC exists and the scope of the problem, rather than on why DMC exists and possible solutions for it (Piquero, 2008).

The current study seeks to move beyond count data and rate calculations to apply theoretical constructs that explain more about the causes of DMC, and give greater guidance to policymakers and practitioners on strategies to overcome DMC. Grounded in the symbolic threat hypothesis (Tittle & Curran, 1988) and following the line of inquiry of Sampson and Laub (1993), Leiber and Stairs (1999), and Armstrong and Rodriguez (2005), we examined both individual- and contextual-level characteristics that may contribute to the disproportionate use of social control against minority juveniles. We used a two-level hierarchical linear model (HLM) to explore individual- and contextual-level predictors of length of preadjudication detention. At the individual level, our study addressed the influence of race, gender, age, seriousness of offense, and drug involvement on length of detention. At the contextual level, we addressed the degree of urbanization, violent crime rate, residential stability, and concentrated socioeconomic disadvantage. The primary research question under study was whether the contextual environment helps to explain longer detention times for minority youth from a theoretical perspective. Although the findings are limited because data on prior offenses were unavailable, we believe the results of this

study add to the literature and understanding of DMC by shedding light on the importance and impact of preadjudication detention on DMC.

Theoretical Foundation

The symbolic threat perspective (Tittle & Curran, 1988), which grew out of the research of conflict theory, provided the theoretical framework for the current study. According to conflict theory, those in positions of authority use mechanisms of social control to criminalize the actions of minority youth (Albonetti, 1991; Quinney, 1970). These actions are taken to protect the status quo and maintain the power of the dominant group. One proposition drawn from conflict theory is that groups that threaten the middle- and upper-class value system are more likely to be subjected to increased incarceration than less threatening groups (Brown & Warner, 1992). Conflict theorists have argued that minorities represent such threatening groups (Liska & Chamlin, 1984; Platt, 1977).

Others modified conflict theory and proposed that the threat caused by the minority group is largely symbolic, not economic or political (Sampson & Laub, 1993; Tittle & Curran, 1988). Irwin (1985) noted the importance of the perception of offensiveness, which is determined by social status and context. Tittle and Curran (1988) argued that officials stereotype minority youths as being a threat to middle-class value systems. Young African Americans are stereotyped as undisciplined, living in dysfunctional families headed by young mothers, aggressive, sexual, dangerous, from communities that are not capable of instilling social norms, and prone to delinquency and drug offenses (Feld, 1999; Tittle & Curran, 1988). These stereotypes may manifest in the belief that minority youth pose a symbolic threat to middle-class standards and public safety (Leiber & Fox, 2005). Officials may, as a result, be more likely to impose greater levels of social control against minority youth. Sampson and Laub (1993) proposed not only that political elites perceive poor people and the underclass as threatening, but that the middle and working classes have the same perceptions. Although the threat may be more symbolic than real, stereotypes can potentially influence the perceptions of officials and may alter their treatment of minority youth (Barkan & Cohn, 2005; Blalock, 1967; Tittle & Curran, 1988).

Contextual conditions of the environment may exacerbate the distance between majority and minority groups and may influence the perceptions of minorities, perpetuating the stereotypes (Lee & Ousey, 2005; Sampson, 1986). Sampson and Laub (1993) argued that differences may exist across counties or jurisdictions that influence the effects of race on court outcomes. Their hypothesis was that poor minority youth would be subjected to greater social control if they lived in counties characterized by racial inequality and the presence of a large underclass (Sampson & Laub, 1993).

That line of theory testing continued with the work of Leiber and Stairs (1999) on the influence of race and social context on diversion at intake. They examined three jurisdictions in Iowa and argued that minority youth would be subjected to more social control than similarly situated Whites in jurisdictions with greater structural and racial inequality.

Based on these theoretical propositions, the current study hypothesized that minority juveniles who live in counties with higher levels of structural disadvantage would spend longer periods in detention than similarly situated White juveniles. This, in effect, provides a partial test of the symbolic threat hypothesis related to juvenile justice decisions at detention.

Previous Literature

Studies have identified several possible explanations for DMC, including selective enforcement (Feld, 1991; Huizinga, Thornberry, Knight, & Lovegrove, 2007), institutional racism (Bishop & Frazier, 1988), indirect effects of socioeconomic factors (Pope & Snyder, 2003; Snyder & Sickmund,

2006), and differential offending (Blumstein, 1995; Pope & Snyder, 2003). Others proposed that biased risk assessment instruments and differential administrative practices (Bridges & Steen, 1998) contributed to DMC. Each of these studies identified the broad discretion traditionally given to juvenile justice system officials, combined with few checks and balances, as a potential source of disparate treatment of minorities (Fagan, Slaughter, & Hartstone, 1987; Pope & Feyerherm, 1990).

While most of the prior research identified individual-level characteristics as contributing most significantly to DMC, others argued that the context in which decisions are made is equally important. Sampson and Laub (1993) created a macrostructural framework for examining juvenile court practices, arguing that the context in which a court exists or in which a juvenile lives is likely to influence the perception of that juvenile or his or her behaviors. Sampson and Laub (1993) examined both community- and individual-level characteristics as predictors of the association between race and social control. Their results indicated that, at the county level, both underclass poverty and racial inequality influenced decisions to detain juveniles. Such findings were believed to be the results of punitive treatment of drug offenders, particularly those perceived to be underclass gang members from a growing underclass population. Sampson and Laub argued that the rising concentration of an underclass population corresponded with the population targeted by the war on drugs. They concluded that underclass Black males as a group were viewed as threatening to the middle class and were therefore subjected to more formal social control for drug offenses by the juvenile justice system.

Research following Sampson and Laub (1993) confirmed that racial residential homogeneity and concentrated socioeconomic disadvantage among Blacks exacerbated their arrest rates (Lee & Ousey, 2005). In addition to poverty and inequality, the extant literature highlighted the importance of urbanism, violent crime rates, and the relative size of the delinquent youth population as influencing adjudication and disposition decisions (Feld, 1991) as well as detention rates (Bridges, Conley, Beretta, & Engen, 1993). Bridges and his colleagues argued that disparities in detention rates were largely the result of structural features such as economic disadvantage, residential instability, and a racially and ethnically heterogeneous population. In line with the symbolic threat hypothesis, researchers argued that structural-level characteristics, particularly disadvantage and inequality, could potentially increase perceived group differences (Armstrong & Rodriguez, 2005; Lee & Ousey, 2005). Such perceptions, real or symbolic, may pressure formal social control agents to strengthen their response to the misdeeds of minority juveniles.

Leiber and Stairs (1999) examined the extent to which social context influenced diversion for Black and White youth during the intake process. They found that youth were subjected to more formal processing in jurisdictions with greater social and racial inequality, and that Black youth were more likely than White youth to receive the most severe outcomes. They used a modified version of Sampson and Laub's (1993) integrated theory to explain race and intake decisionmaking in three courts in Iowa. Leiber and Stairs extended Sampson and Laub's research by identifying not only the structural factors associated with each jurisdiction, but also the decisionmakers' beliefs in racial differences and in punitive treatment. Their study provided support for the symbolic threat hypothesis, broadening the understanding of race, contingencies, and social control.

Armstrong and Rodriguez (2005) extended the framework developed by Sampson and Laub (1993) by developing a multilevel examination of the influences of individual characteristics and contextual environments. Their primary finding was that, controlling for factors at multiple levels, delinquents living in areas with high minority populations (heterogeneous populations) were more likely to be detained regardless of their race or ethnicity than those living in areas with low minority populations (Armstrong & Rodriguez,

2005). However, they also found that minority offenders living in communities that were urban, had large minority populations, and had high violent crime rates were treated more severely than their White counterparts. Armstrong and Rodriguez concluded that their results supported the racial threat hypothesis: a perceived threat of minority juveniles, especially those who lived in racially heterogeneous communities, placed minority youth at greater risk of detention regardless of overall crime rates. Although their study was limited to a dichotomous outcome measure (detained versus not detained), Armstrong and Rodriguez argued that future analyses of disproportionality must simultaneously consider individual- and community-level factors, as well as potential cross-level interactions.

The Current Study

Extending prior research, the current study explores how characteristics of contextual environments may influence the relationship between incident- and offender-level characteristics and preadjudication detention time. Prior analyses have examined race differences in the likelihood of detention using a dichotomous indicator; but few have examined variation in the amount of time spent in preadjudication detention. Detention is the earliest process point beyond the initial taking into custody of an alleged juvenile offender. It is therefore a critical juncture in the juvenile justice process. Studies indicate that time spent in detention is largely wasted, because few services that respond to the needs of detained juveniles are provided (Austin, Johnson, & Weitzer, 2005). Moreover, detention makes it increasingly difficult for juveniles to establish and maintain positive relations with family and school (Austin, Johnson, & Weitzer, 2005; Mendel, 2009), while making it increasingly easy to establish associations with delinquent peers.

The current study posits the following: being detained, and experiencing longer periods of time in detention, negatively affects minority juveniles. As a result, minority juveniles have a greater likelihood of being moved further along in the justice system and are at increased risk for negative outcomes at each subsequent step in the juvenile justice process. As youth spend longer periods of time in detention, they are exposed to a greater number of antisocial peers, are separated from their families, and are out of the mainstream educational process. Prior studies indicate that the longer juveniles spend in detention, the less opportunity they have to participate in their defense, and the more likely they are to be detained at adjudication (Feld, 1999; Leiber, 2002).

Developing a more refined understanding of the amount of time spent in detention is crucial to developing our understanding of and addressing disproportionality in the juvenile justice system as a whole. As minority group membership varies across counties, we expect to find differences in the influence of race on length of detention relative to the size of the minority population. Such findings would have implications for both policy and training in the juvenile justice system.

Methods

Based on the preceding discussion, we formulated the following research hypotheses that guided our study. First, controlling for a number of offender- and contextual-level factors, we expected to find that minority juveniles experience longer detention periods than their White counterparts. Second, we expected that structural disadvantage would be associated with longer-than-average detention times. Finally, we expected racial disparities in detention to be at least partly contingent upon levels of socioeconomic disadvantage in the contextual environment. Specifically, we predicted that the relationship between minority status and detention would be exacerbated in socioeconomically disadvantaged communities. To address these hypotheses, we used a two-level HLM to explore individual- and contextual-level predictors of length of preadjudication detention.

Data

Data addressing first-level units of analysis for this study (juvenile detentions) were drawn from 14 juvenile detention centers in 1 Southern state. Data for approximately 80,000 incidents between 2000 and 2008 were collected. After removing cases that contained missing information on one or more variables, the number of incidents was reduced to 67,612.[1]

The second, or contextual-level, units of analysis were counties in which the incidents occurred. County-level data afford several advantages over other units of analysis such as cities or judicial districts, including greater availability of data, more comprehensive population coverage, and conceptually comparable spatial units across the rural–urban continuum. Moreover, from a conceptual standpoint, units of analysis were needed that allowed for meaningful variation across a region. In an effort to retain the maximum number of counties while ensuring the reliability of our estimates, we used 2 selection criteria that resulted in 34 of 75 counties being selected for analysis. We selected only those counties that: 1) had at least 10 juvenile crimes in which the offender was detained, and 2) had at least 80 non-White residents.[2]

Dependent Variable

The dependent variable was the length of time in preadjudication detention. Knowing that a youth was detained at all is important, but knowing how much time that youth actually spent in detention is essential to understanding potential negative and long-term effects of detention on him or her. We proposed that the same type of stereotypes and biases that cause a youth to be removed from his or her home at adjudication would also be present at the point of detention, and work to keep minority youth detained for longer periods of time than White youth, even when other characteristics are the same.

Data from detention center files provided the exact time each juvenile was logged into and released from a facility. The total time the youth was detained before adjudication was collapsed into the following seven mutually exclusive categories: less than 1 hour; 1 hour to 72 hours (3 days); 73 to 336 hours (14 days); 337 to 720 hours (30 days); 721 to 1,080 hours (45 days); 1,081 to 1,440 hours (60 days); and greater than 1,440 hours. Less than 1 hour was selected to account for cases in which juveniles were held only until someone could arrive to collect them. One hour is reasonable, since the detention centers are geographically dispersed and the entire state can be traversed from north to south or east to west in 3 hours. The category of 1 to 72 hours (3 days) was selected because juveniles cannot be detained longer than 72 hours without a detention hearing. While this is a logical cutoff point, some juveniles are detained longer than 72 hours because the law excludes weekends and holidays. The category of 73 to 336 hours (14 days) was chosen because the state's juvenile code requires that juveniles have an adjudicatory hearing within 14 days of being detained. The remaining categories were selected based on the decision to maintain a consistent 2-week timeframe during the first 2 months of detention. Finally, the category of greater than 1,440 hours (60 days) was selected because, after 2 months, most detainees were held for a variety of reasons not related to a detention decision (e.g., continuance requests).

Individual-level Measures

The primary individual-level explanatory variable in this study was the race of the offender. This study used a dichotomous measure of race drawn from detention center records, coded 0 for Whites and 1 for non-Whites.[3] The symbolic threat

[1] Nearly 10,000 cases were removed from the analysis due to the unavailability of data on the nature of the offense.

[2] While less stringent than some prior analyses (Maas & Hox, 2005; Parker & McCall, 1999), the selection criteria are based on calculated decisions that allowed for reliable estimates and the retention of the maximum number of first- and second-level units. More stringent cutoffs (e.g., 30 offenses and 2% minority population) do not substantively alter the results.

[3] Approximately 90% of non-White offenders are Black, while the remaining individuals classified themselves as members of another minority group or as having a mixed racial background. Supplemental analyses including only Blacks produced results substantively similar to those presented below.

hypothesis proposes that juvenile justice officials exercise greater social control over minorities based on stereotypes that portray them as dangerous, undisciplined, coming from dysfunctional families, and a threat to middle-class values (Tittle & Curran, 1988). The race of detained juveniles therefore sets a baseline for examining the potential of contextual variables to influence detention decisions.

Previous research indicates that several legal and extralegal factors may also influence official treatment of minority juveniles (Armstrong & Rodriguez, 2005; Leiber & Fox, 2005). Individual-level variables that have been found to influence the decision to detain youth include offender age (Bridges et al., 1993; Leiber & Mack, 2003) and gender (Harms, 2002). Both of those extralegal factors were included in the analysis. Bishop and Frazier (1988) found seriousness of the offense to be a stronger predictor of detention than race. Consistent with this study, a binary measure indicating whether an incident was a misdemeanor or a felony was included in the current analysis.[4] Finally, following Sampson and Laub's (1993) reasoning that drug offenders are perceived as particularly threatening, we included a binary indicator of whether or not an incident involved a drug crime.

Detention records from this state do not provide information on a number of independent measures used in previous studies. For example, the offender's family structure, prior record, prior sentences, or the number of charges were not available. Given the findings of previous studies addressing prior record as a determining factor in juvenile justice decisions, the inability to obtain these data represents a serious limitation of the current study. To the extent that these or other omitted measures influence the length of preadjudication detention, our results suffer from omitted variable bias.[5]

[4] Because Federal law prohibits the secure detention of status offenders, they were excluded from this analysis.

[5] In the attempt to control for bias in our estimators, we report robust standard errors, which are relatively insensitive to model misspecifications and distributional assumptions at each level.

Contextual-level Measures

In addition to the role of individual-level characteristics in juvenile detention decisions, the extant literature identified certain characteristics of contextual environments that may influence preadjudication detention among youth. Specifically, youth in socioeconomically disadvantaged urban counties with high crime rates are likely to be subjected to greater levels of social control than youth in more affluent suburban counties with low crime rates (Armstrong & Rodriguez, 2005; Bridges & Steen, 1998; Lee & Ousey, 2005; Leiber & Stairs, 1999). Based on the research of Sampson and Laub (1993) and Tittle and Curran (1988), the following variables were drawn from estimates provided by the U.S. Census for 2000 and 2005:

- The percentage of residents living in poverty in 2004;
- The percentage of residents unemployed in 2005;
- The percentage of households headed by single females with children in 2000;
- The percentage of the population that was Non-White in 2005;
- The percentage of households that were owner occupied in 2005;
- The percentage of residents who lived in the same home between 1995 and 2000;
- The 2004 index crime rate (transformed to its natural log); and
- The metropolitan status of the counties.

These measures captured levels of community structural disadvantage, residential stability, and urbanization.

In line with the extant literature (Land, McCall, & Cohen 1990), an analysis of the correlation between the contextual measures highlighted excessive levels of multicollinearity. A principal components factor analysis suggested the measures could be condensed into two summary

indices. Poverty, unemployment, female-headed households, and the percentage of the Non-White population were loaded on a single component. These measures were combined to form a standardized concentrated disadvantage index by first standardizing each measure and then averaging the standardized values. Population stability and home ownership were loaded on a second factor and combined to form a standardized residential stability index. Metropolitan status and the 2004 index crime rate were entered as stand-alone measures.

Analytical Strategy

To address the study's hypothesis, we used a two-level HLM estimating fixed effects to explore individual- and contextual-level predictors of length of preadjudication detention. While we do expect the impact of race on detention time to vary across contextual environments, we do not explore this possibility with a random effects model in the current analysis. Instead, we test our prediction that the impact of race is influenced by structural disadvantage with a cross-level interaction between offender race and levels of socioeconomic resource disadvantage in the contextual environment.

Multilevel models offer a number of advantages over ordinary least squares (OLS) analyses. Multilevel models separate the contributions of individual and contextual effects, and they explicitly recognize the clustering of individuals within communities, thereby avoiding the assumption of independent observations. Furthermore, multilevel models allow for a more precise estimation of cross-level interaction effects, since all estimates are adjusted for covariates at multiple levels.

Results

The results reported here first address descriptive analyses of the individual variables. The descriptive analysis is followed by a discussion of the results of our multilevel analysis testing the hypotheses of this study.

Descriptive Analyses

The means and standard deviations for all measures across both incidents and counties are provided in Table 1. Including both incident and county means allows for the comparison between the average of the county-specific means and the overall mean for all incidents. The means of the preadjudication detention time measures are similar across the 67,612 incidents (2.71 hours) and the 34 counties (2.67 hours). Therefore, the average of county-specific mean preadjudication detention times is comparable to the overall mean preadjudication detention time across incidents. As noted above, this measure is categorical, with the second and third categories covering 1 to 72 hours (3 days) and 73 to 336 hours (14 days). A mean preadjudication detention time in this range was expected, since this is the timeframe in which juveniles must either be released or given a detention hearing. The category of 1 to 72 hours (3 days) was also the modal category, with 32,626 juveniles released within this timeframe. Another 18,631 juveniles were released after serving between 73 and 336 hours. In all, 81.6% of the juveniles in this analysis served a preadjudication detention time of 14 days or less.

Table 1. **Descriptive Statistics**

	Detention Time	Non-White Offender	Offender Age	Female Offender	Offense Severity	Drug Offense	Concentrated Disadvantage	Residential Stability	Metro	Crime Rate (LN)
Incidents[a]	2.71 (1.15)	.49 (.50)	15.41 (1.55)	.26 (.44)	1.26 (.44)	.10 (.30)	–.23 (.80)	–.964 (.82)	.85 (.35)	8.57 (.44)
Counties[b]	2.67 (.43)	.47 (.32)	15.79 (.62)	.19 (.11)	1.48 (.32)	.15 (.11)	0 (1)	0 (1)	.38 (.49)	8.20 (.54)

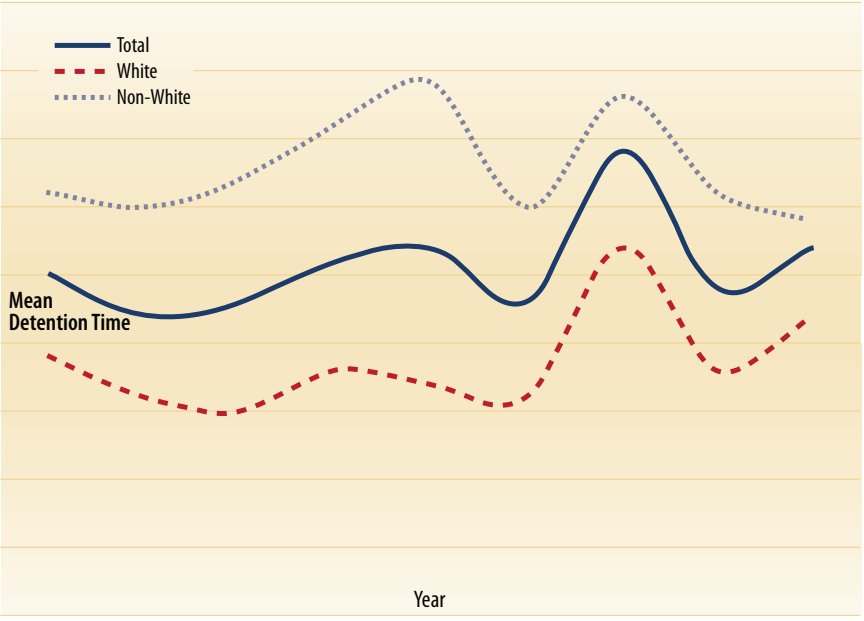
[a] N = 67,612. [b] N = 34.

Among the juvenile offenders included in this analysis, 49% (32,834) were non-White. The average of the county-specific means (.47) indicates that, across counties, approximately 47% of offenders are non-White. The relatively large standard deviation of this measure (.32) highlights considerable variation between counties in the proportion of minority detainees. This is an initial indication of DMC, since only about 13% of the state's population is non-White. In the counties included in this analysis, non-Whites are between 0.3% and 61% of the population, with a between-county average non-White population of about 20%. This disproportionate contact is consistent with the extant literature and likely represents a combination of differential involvement in delinquency and juvenile justice practitioners who view detention as a better alternative for minority juveniles.

Because our data include cases spanning nearly a decade, it is critical to explore the potential variation of DMC by race over time. In Figure 1, we examine mean preadjudication detention times for Whites and minorities from 2000 to 2008. The most telling characteristic of this figure is that, in every year, mean preadjudication detention times for minorities are greater than those for Whites. This suggests that DMC has been a consistent and long-term problem in this state. In supplemental analyses, we confirmed that the overall mean preadjudication detention time for minorities is significantly longer than the average preadjudication detention time for Whites. In addition, race effects are consistent across gender groups, with average preadjudication detention periods for male and female minorities being significantly greater than for their White counterparts.

Data from the most recent years, however, indicate that race-specific mean detention times are converging, with rates for Whites increasing and minority rates decreasing. Figure 1 indicates that trends in mean preadjudication detention times for Whites and minorities are tending to track one another quite closely. It may also be important that, while the mean preadjudication detention time for Whites began to rise in 2007, the mean preadjudication time for minorities continues to decrease. This may show that efforts by the state to reduce DMC are having an effect. While this provides some grounds for optimism regarding future reductions in DMC, it seems that currently, minorities continue to be detained for longer periods. Overall, the consistencies in the data suggest that aggregating data from 2000 to 2008 is warranted and probably does not introduce a significant degree of bias into the current analysis.

Figure 1. **Race-Specific Mean Detention Times by Year**



Beyond race, the mean age of offenders was 15.41 years, 26% (17,540) were female, 10% (7,008) were charged with drug offenses, and 26% (17,897) of incidents involved a felony. A comparison of means in Table 1 suggests that the age and gender of offenders and the prevalence of their drug charges are relatively consistent across counties and incidents. On the other hand, there is considerable variation across counties in the proportion of incidents that involved

felonies. Moreover, a disproportionate number of offenders were from metropolitan counties, with 85% of incidents (57,667) occurring in 12 metropolitan counties. Considerable variation across counties was also noted in the proportion of residents living in poverty, the proportion of households headed by single females with children, and the 2004 index crime rate. County poverty rates varied between 9.5% and 28.7%, with a mean of 18%. Female-headed households were between 4% and 17% of households, with a between-county average of 8%. Index crime rates varied between 1,100 and 8,600 per 100,000 residents, with an average of approximately 4,100 crimes per 100,000 residents. Unemployment rates were more consistent across counties, with rates varying between 3% and 10%, and an average of 6%. Residential stability was also rather consistent across counties, with an average of 54% of residents living in the same household between 1995 and 2000.

Multilevel Analysis

The HLM results examining variation in preadjudication detention time are presented in Table 2. To determine whether average detention

Table 2. **Results of Multilevel Models of Disproportionality**[a]

		Model 1	Model 2	Model 3
	Intercept	2.654** (.067)	.167 (.742)	.167 (.742)
Contextual Measures	Concentrated Disadvantage		−.074 (.063)	−.074 (.063)
	Residential Stability		−.119 (.079)	−.119 (.079)
	Metro		−.327 (.217)	−.327 (.217)
	Crime Rate (LN)		.314** (.098)	.314** (.098)
Individual Measures	Non-White Offender	.081** (.034)	.081** (.034)	.100** (.029)
	Female Offender	−.064** (.016)	−.064** (.016)	−.064** (.016)
	Offender Age	.361** (.086)	.361** (.086)	.361** (.086)
	Age Square	−.011** (.003)	−.011** (.003)	−.011** (.003)
	Offense Severity	.194** (.069)	.194** (.069)	.193* (.069)
	Drug Offense	−.144** (.052)	−.144** (.052)	−.141** (.051)
C.L. Interaction	Race/Disadvantage			.074** (.031)
Variance Components	County $\bar{x}$	.122**	.086**	.086**
	Level 1	1.233	1.233	1.233
Deviance		206,174.036	206,167.605	206,135.864

[a] Results based on 67,612 incidents across 34 counties.

Robust standard errors in parentheses.

**$p \leq .01$ *$p \leq .05$

times varied across counties, an unconditional model (not shown) was estimated. This model partitioned the total variation in preadjudication detention time into variations between and within counties, serving as a baseline by which to judge the variance explained by subsequent models. The intra-class correlation coefficient from the unconditional model indicated that approximately 9% of the variation in preadjudication detention time occurred between counties, showing that a moderate amount of the total variation in detention time is attributable to contextual environments.

Working from the symbolic threat perspective, our first research question examined the influence of race in predicting the length of preadjudication detention. (The symbolic threat perspective holds that minority youth pose a threat to middle-class values and are therefore subject to more formal social control than their White counterparts; Sampson & Laub, 1993; Tittle & Curran, 1988). Our analysis began by estimating the within-county association between individual-level characteristics and preadjudication detention time. The results of this analysis are presented in Model 1 of Table 2. Each of the individual-level measures are centered on their respective county means, allowing the intercept term (2.654) to be interpreted as an estimate of the average preadjudication detention time served across the 34 counties when the individual-level measures are set at their respective group means. Here, the average preadjudication detention time was between the categories of 1 to 72 hours (3 days) and 73 to 336 hours (14 days). Furthermore, the significant variance component for county-level mean detention time (.122) indicates there is substantial variation between counties.

Each of the individual-level measures in Model 1 is a statistically significant predictor of variation in preadjudication detention time. The most important of these coefficients for the research at hand is the slope of the within-county association between an offender's race and detention time. This significant ($p < .01$) and positive slope (.081) suggests that, compared with Whites, non-White offenders were held in detention facilities for significantly longer periods before adjudication. These results support the symbolic threat hypothesis by indicating that, controlling for other factors, non-White offenders experience an increased level of contact with the juvenile justice system before adjudication than Whites. However, this finding is mitigated by the fact that we do not have information on prior record. The extent to which these decisions may have been influenced by the prior records of juveniles cannot be determined, which reduces our confidence in the findings at least to some degree. We argue, however, that even if there were an influence of prior record, the symbolic threat hypothesis is supported by the strength of this finding.

The results also confirm findings from prior studies (Armstrong & Rodriguez, 2005; Leiber & Mack, 2003). Females tended to be detained for shorter periods, while older juveniles, both male and female, and those charged with felonies tended to be detained longer. Contrary to our expectations, juveniles charged with drug offenses tended to serve less time in preadjudication detention than those charged with other offenses. This result, however, should be interpreted with caution. Drug offenses vary considerably from one charge to another; some are misdemeanors, while others are felonies. In addition, since drug offenses are not generally violent, those charged with drug offenses may be released before adjudication. The negative effect of age suggests that the positive relation between age and detention time trails off among older juveniles, which is consistent with previous findings (specifically Lieber & Mack, 2003) (–.011).

A measure of the proportional reduction in variance, or variance explained by the individual-level measures, can be estimated by comparing the variance components in Model 1 of Table 2 with those in the unconditional model. The ratio of

the difference in the between-county variance across these models indicates that little of the variation (2%) in preadjudication detention time between counties is explained by individual-level measures. On the other hand, the substantial between-county variance left unexplained suggests contextual environments may significantly influence preadjudication detention times. While a minimal amount of within-county variance was explained, there was a substantial decrease in the deviance statistic between models, suggesting the measures explained a significant amount of variation in preadjudication detention time, both between and within counties.

In Model 2 of Table 2, the contextual measures of concentrated disadvantage, residential stability, metropolitan status, and the index crime rate were entered into the model as predictors of the between-county variation in average length of preadjudication detention. Based on the extant literature, we hypothesized that counties with large non-White populations and high levels of poverty, unemployment, and female-headed households would exhibit higher average preadjudication detention times for all juvenile offenders. Contrary to our prediction, after accounting for the incident- and offender-specific characteristics, we found that concentrated county-level socioeconomic disadvantage was not a significant predictor of variation between counties in average preadjudication detention time. However, the results in Model 2 did suggest that the overall index crime rate was positively associated with average preadjudication detention time. This indicates that youth arrested for crimes in counties with higher crime rates were, on average, held in preadjudication detention longer than youth arrested for crimes in counties with lower crime rates. None of the other contextual-level variables showed any predictive power in this equation. The ratio of the difference in the between-county variance components across Models 1 and 2 ([.122 – .086]/.086) indicated that a significant amount (approximately 41.8%) of the variation in detention time between counties was explained by contextual-level measures, mainly the overall index crime rate.

The final component of this analysis, which is closely related to the symbolic threat hypothesis, is shown in Model 3 of Table 2. This model includes an interaction term between county-level concentrated resource disadvantage and an offender's race. We hypothesized that the positive effect of minority status on preadjudication detention would be exacerbated in structurally disadvantaged communities. As predicted, we found a significant ($p < .01$) and positive (.074) cross-level interaction between county-level disadvantage and an offender's race. In structurally disadvantaged counties, the positive association between minority status and preadjudication detention was significantly stronger than in less disadvantaged communities. Another interpretation of this cross-level interaction term is that a minority juvenile suspected of perpetrating a delinquent offense in a county with a high level of resource disadvantage tended to serve a significantly longer time in preadjudication detention than did a similarly situated White offender or a minority offender in a more affluent community.

Discussion and Conclusion

The Juvenile Justice and Delinquency Prevention Act of 1992 required states to identify disproportionality in their juvenile justice systems and design intervention programs to address this form of discrimination. Despite such efforts, most research shows minority youth continue to be detained at greater rates than their White counterparts (Knoll & Sickmund, 2010; Pope, Lovell, & Hsia, 2002). This article confirms previous findings, at least at the point of preadjudication detention. Our findings showed minority youth were detained significantly longer than their White counterparts across differing contextual environments. In this research, we use a symbolic threat perspective to offer a deeper analysis and explanation of the potential origin of this disparity, and to provide context for interventions. We argue that contextual environments are

important elements in understanding disproportionate case processing, because they contribute, at least in part, to developing the biases and stereotypes that underlie the perspective.

Although DMC has been a focus of concern since 1992, identifying the problem appears easier than assessing the underlying causes. Many researchers have presented findings that DMC exists, but few have provided detailed discussions as to why it exists and how it can be overcome. One reason for that limitation is that studies of DMC are generally not well grounded in theory. Framing the current study within the symbolic threat perspective may provide insight into the types of factors that should be analyzed in future studies. To take the symbolic threat perspective one step further, contextual environments may increase the perceived threat; that is, minority youth from impoverished areas characterized by greater socioeconomic disadvantage may be perceived as a greater threat than other minority youth. Therefore, as perceived threat increases, minority youth may experience more formal and severe social control, such as longer periods of detention.

Our HLM analyses support the symbolic threat perspective within the discussion of DMC at the point of preadjudication detention, indicating that non-White youth spend longer periods in detention before adjudication than their White counterparts. In Model 1 of Table 2, the significant (p <.01) and positive slope (.081) of the relationship between average detention time within counties and the offender's race suggested that, compared with Whites, minority offenders were held in detention facilities for significantly longer periods of time. In addition, the impact of race on detention remains, even after controlling for the influence of a number of offender and incident-specific characteristics as well as certain contextual-level factors. That is, our results suggest juvenile justice decisionmakers impose greater levels of formal social control on minority juveniles than on White juveniles, and that this is not fully attributable to legal factors. Race remains a critical predictor of social control, suggesting that officials may consider minority juveniles either more likely to reoffend or more deserving of official intervention.

Following the line of inquiry begun by Sampson and Laub (1993) and extended by Armstrong and Rodriguez (2005), contextual-level variables were included in the analysis. First, Sampson and Laub (1993) articulated the symbolic threat perspective, arguing that minority youth living in areas characterized by structural disadvantage and racial inequality would be treated more formally by the juvenile justice system than nonminority youth. Second, we proposed that certain characteristics of the contextual environment would predict variation in the average amount of time juveniles were detained prior to adjudication. Specifically, we predicted that socioeconomic resource disadvantage at the county level would be associated with greater average preadjudication detention times for all youth. The results of our study did not support this prediction. Resource disadvantage at the county level was not significantly associated with average preadjudication detention times. In fact, of the contextual measures included in our analyses, only the index crime rate was predictive of variation in average preadjudication detention times across counties. This suggests that all youth may be perceived as more threatening, and in need of formal intervention, in communities with elevated rates of crime. Thus, official stereotypes might work against the philosophy of individualized treatment of youth in certain contextual environments.

Although resource disadvantage at the county level did not account for variations in overall length of preadjudication detention across counties, a cross-level interaction between resource disadvantage and race was significant. Minority youth from contextual environments characterized by greater levels of structural disadvantage tend to be detained for longer periods than either their White counterparts or minority youth in more affluent areas. Applying the theoretical constructs of the symbolic threat perspective, justice

officials are likely to reproduce biases and stereotypes that exist within the broader community based on race and disadvantage.

Few studies to date have attempted to understand whether juvenile justice practitioners hold stereotypes about minority youth, or what these stereotypes may be. The studies that have investigated the phenomena, however, indicate that practitioners perceive minority youth differently from White youth (Bridges & Steen, 1998; Ward, Kupchik, Parker, & Starks, 2011). For example, Bridges and Steen (1998) found that Black youth were more likely to be characterized as less amenable to juvenile court treatment and as more likely to pose a threat to society than White youth. Stereotypes and biases are likely to develop because of the social distance from one group to another. In areas marked by greater levels of resource disadvantage, minority youth are therefore more likely to experience negative outcomes than they are in other areas. Future research should focus on understanding how justice officials view minority offenders, their families, and the neighborhoods in which they live, and how these views influence their decisions (Rodriguez, 2007, 2010). Furthermore, little research has been conducted on the attitudes of local juvenile justice authorities toward DMC in general, and whether they believe DMC to be a problem in the local court. Findings from other studies indicate that Black juvenile justice practitioners are more likely to identify DMC as a concern, whereas White practitioners appear more apathetic toward DMC (Ward et al., 2011). Until concerns about DMC are embraced by practitioners, interventions are unlikely to be tested.

Another goal for future research should be to develop a better understanding of who the juvenile justice practitioners are in each state. For example, in a study in Sacramento, California, a cultural audit was conducted to better identify factors contributing to DMC in one jurisdiction (Hoyt, Schiraldi, Smith, & Ziedenberg, 2002). Among the surveys returned, results indicated that juvenile court practitioners were older, White, had limited cross-cultural knowledge or understanding, and were generally not culturally competent to serve diverse populations of youth (Hoyt et al., 2002). Our study supports Hoyt and colleagues in their call for the need to better understand the cultural competency and perspectives of those who serve juveniles.

By using multilevel modeling techniques to simultaneously estimate the effect of offender characteristics and county-level factors on preadjudication detention, this study adds to a growing body of literature indicating that context in juvenile justice decision making should be examined. Our study overcomes several limitations of earlier studies. First, the data represent a substantial majority of all juvenile offenders from a single state in which 13% of the population is non-White. These data facilitated the examination of a large number of delinquent incidents while allowing these incidents to be grouped into meaningful subunits (counties). In addition, the current study analyzed data drawn from 2000 to 2008. These data should reflect the continued efforts on the part of the state to decrease disproportionality beyond what may have existed when earlier research was conducted.

While the current study addressed a number of limitations in prior analyses of racial disparities, there are issues beyond the scope of this effort that should be addressed in future research. First, potentially critical independent variables (i.e., the offender's family structure, prior record, prior sentences, or number of charges) could not be included in the current analysis because available detention records did not provide such information. To the extent that these measures influence the likelihood and length of preadjudication detention, our results suffer from omitted variable bias. This is particularly important concerning the prior record of juveniles, since research in this area indicates that prior record is a critical variable in juvenile justice decisions. Given this limitation, our results should be interpreted with caution.

Nevertheless, we believe this study provides at least initial support for the symbolic threat hypothesis. The finding of a significant relationship between preadjudication detention and the combined effect of race and structural disadvantage indicates there may be some stereotypes remaining in the juvenile justice system concerning minority youth from disadvantaged areas. We believe that inclusion of prior record would not fully mediate this combined effect. Future studies should explore the validity of our results by including additional factors that may influence detention decisions. We were unable to test the thesis that longer stays in preadjudication detention lead to negative outcomes later in the process. Future research should examine the association between time served in preadjudication detention and negative outcomes at later process stages, such as postadjudication confinement.

Overall, our research indicates that race and context matter when predicting variations in detention time. The race of a juvenile seems to play a role in the disparity in application of formal social control mechanisms. Community-level factors may explain or alter this phenomenon. As such, we challenge researchers to continue to examine the potential influence of contextual environments on racial disproportionality in the juvenile justice system.

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