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Summary

Reducing Gang Violence: A Randomized Trial of Functional Family Therapy

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Reducing Gang Violence: A Randomized Trial of Functional Family Therapy: Summary

During the past quarter century adolescent street gangs, once primarily a phenomenon of a few major metropolitan areas, have spread rapidly throughout the United States. In its most recent survey, the National Youth Gang Center estimated that there were 30,700 gangs with 850,000 members located in over 3,100 jurisdictions throughout the country. Gangs were found in 85% of larger cities, 50% of suburban counties, 32% of smaller cities, and 15% of rural counties. The number of gangs, gang members, and gang-related homicides are on the rise when compared to the previous 5-year average and the problem of street gangs now reaches into all corners of American society (Egley, et al., 2014).

Gang members are involved at a higher level than non-gang members in virtually all forms of criminal behavior including violent crime, property crime, drug use, drug sales, and gun crime (Thornberry et al., 2003). The impact of gang membership has also been linked to the recent upswing in homicide and violent crime in cities such as Philadelphia, the site of this study, and Chicago (DEA, 2015; University of Chicago Crime Lab, 2017). Gang membership also has a host of negative consequences that disrupt the normal course of development. These consequences include reduced school commitment and educational attainment, becoming a teen parent, experiencing unemployment, commitment to negative peers, and anger identity (Krohn et al., 2011; Melde and Esbensen, 2011; 2013; Pyrooz, 2014). Although adolescents are typically only gang members for 1 or 2 years, the negative impact of their exposure to the gang lasts into adulthood. During their late twenties and early thirties, gang members evidence increased economic hardship and family problems, poorer physical and mental health, substance abuse and continued involvement in crime including elevated rates of incarceration (Gilman, Hill, Hawkins, 2014; Krohn, et al., 2011). Similarly, gang membership is significantly related to the perpetration of child maltreatment against the next generation (Augustyn, Thornberry, and Krohn, 2014).

Given the prevalence of gangs and their negative impact both on public safety and the behavior and development of gang members (Pyrooz, Turanivic, Decker, and Wu, 2016; Thornberry, Krohn, Lizotte, Smith, and Tobin, 2003), it is important to develop effective programs to prevent gang membership and to reduce the impact of gangs on the adolescents who do join them. However, in this area where effective programs are strongly

needed, they are least available. While there are evidence-based programs (EBPs) for a variety of other problem behaviors, there are currently no known gang programs that meet rigorous standards of demonstrated effectiveness such as those promulgated by the Blueprints for Healthy Youth Development (*blueprintsprograms.com*).

The purpose of this study was to produce knowledge about how to prevent at-risk youth from joining gangs and reduce delinquency among active gang members. The study evaluated a modification of Functional Family Therapy, a model program from the Blueprints for Healthy Youth Development initiative, to assess its effectiveness for reducing gang membership and delinquency in a gang-involved population.

Functional Family Therapy (FFT)

FFT is a brief and widely disseminated EBP for youth presenting with problem behaviors including delinquency and drug and alcohol abuse (Barton & Alexander, 1981; Alexander & Parsons, 1982; Waldron & Brody, 2010; Waldron & Slesnick, 1998; Waldron et al., 2001). Although never studied specifically in a population at risk for gang membership, FFT has undergone numerous evaluations, most of which have reported favorable results. A recent meta-analysis (Hartnett et al., 2016) concluded that there is support for the effectiveness of FFT compared with untreated controls and well defined alternative treatments. Although results from the entire body of FFT evaluations favor FFT, there is considerable heterogeneity in the size of its effect across studies. While earlier trials reported a moderate to large impact as measured by effect sizes (ESs), more recent studies have generally reported a smaller impact, with the most recent trial reporting an outcome favoring the control group on a measure of delinquency (Humayun et al., 2017). Some evidence also suggests that FFT effects may not be the same across all sub-populations and studies in US populations have seldom involved predominantly minority samples (Darnell & Schuler, 2015). As a result, this study was intended to provide a rigorous test of FFT under contemporary natural conditions, with an urban, predominantly minority population selected for its high risk for gang involvement.

FFT typically involves 12-15 face-to-face sessions of approximately one hour during which trained therapists work with the targeted youth and caregivers, usually in a home setting. The entire program is usually delivered over a three-month period. For this study, FFT was accommodated for use with a population at risk for

gang membership. Although FFT therapists generally encounter youth who are gang-involved or deemed to be at risk for gang involvement, no study to date has focused specifically on the effectiveness of FFT for this important population. In preparation for the study, FFT LLC modified the FFT manual and training materials to directly address issues that are likely to be more salient in a population at risk for gang membership. This accommodation, called "FFT-G," otherwise retained all of the basic components and approaches of the full FFT model. The costs for FFT in Pennsylvania are reimbursed through Medical Assistance, or Medicaid.

Method[1]

The study randomly assigned adjudicated youth from a single courtroom in the Philadelphia Juvenile and Family Court to FFT-G or a "treatment as usual" (TAU) condition. The TAU condition involved probation as well as referral to an alternative family therapy program, Family Therapy Treatment Program (FTTP), that was of approximately the same intensity and duration as FFT, but was not manualized and had not undergone rigorous evaluation. Services provided by this alternative program are also eligible for reimbursement through Medicaid.

Study Setting and Participants

The study site, Philadelphia, was selected because it met two criteria: First, the FFT organization indicated that Philadelphia had a sufficient number of trained teams to provide the required level of service and a strong infrastructure for implementing FFT as evidenced by high levels of model adherence/fidelity. Second, data from the National Gang Center's ongoing survey of law enforcement agencies, as well as site visits to Philadelphia, identified the city as one with chronically high levels of gang activity.

Participants were families of study-eligible youth whose cases were heard on the participating judge's docket between September 15, 2013 and February 4, 2016 and for whom the judge ordered family services. To be eligible for study inclusion, youth had to be an 11-17-year-old male and could not have been referred for FFT services in the past year. A total of 129 families participated in the study. Families were disproportionately of lower income. The caregiver sample was 79% female, 80% African-American, 19% Hispanic/Latino, 25% married, with mean age 41.1 (SD=8.4). The mean age of participating boys was 15.4 (SD=1.4).

[1] This study represents an independent evaluation of FFT-G. FFT LLC had no involvement in data collection or analysis.

Study Recruitment and Randomization into Research Conditions

Upcoming court dockets were scanned two weeks before each hearing date to identify study-eligible youth. For eligible youth whom the participating judge deemed suitable for community services, she ordered "family services" as a condition of probation. Two members of the research team, who were present each day in the courtroom, met in a private space with the parents/guardians and youth following the hearing to obtain parental consent and youth assent, and then conducted pretest interviews with the consenting parent and child in separate offices. As compensation for their time, the caregiver and youth were each paid $25 to complete the interview. Following consent and pretesting, the families were randomly assigned to FFT-G (N=66) or the alternative program (FTTP; N=63) by the research team using a list of random numbers previously computer-generated by the PI. Referral forms for the appropriate treatment (FFT or FTTP) were sent to Community Behavioral Health (CBH) which handles all such referrals for court services and reimburses providers using Medicaid funds. CBH processed the referrals and assigned each family to one of the three participating FFT agencies (for treatment cases) or to the agency that provides FTTP. Researchers then informed the judge and the probation officers (POs) of the specific assignment.

The project ensured that FFT-G cases were assigned to the FFT-G trained therapists within each FFT agency. Six-months after randomization the post-test interviews were and carried out, generally in the homes of participating families. Post-test response rates were similar for treatment and control groups (92% for both treatment and control youth and 88% FFT-G vs. 92% for control parents).

Data

Data come from four main sources. First, all participants (youth and caregiver) were interviewed at study intake and again at six months post randomization. Second, data on contacts with the juvenile justice system (the full history as well as subsequent contacts for the 18-month period following random assignment) were collected from Family Court records. Adult court records were also checked for the post-random assignment period and residential placements were collected from court records. Third, data on community services received during the first six months following random assignment as well as the costs of those services were obtained from CBH. These data were augmented with records of community services paid through a special fund maintained by

Family Court, as well as the cost of residential placements provided by the Department of Human Services. Finally, data on FFT-G fidelity and adherence were obtained from the FFT LLC computerized tracking system into which therapists entered information about each client contact.

Analysis

An "intent to treat" (ITT) approach, which compares all participants assigned to the treatment group to all participants assigned to the control group, was used to evaluate the program. Regression models included a binary variable measuring assignment to the treatment condition, variables that differed significantly between the treatment groups at pretest, and the pretreatment measure of the outcome variable when available. When no pretreatment measure of the outcome variable was available, all significant pretest predictors of the outcome were included as control variables. These models were used to generate adjusted means for each outcome. Analyses were conducted both overall and separately for groups at low- and high-risk for gang membership.

Results

Implementation

FFT-G was delivered by six trained family therapists, all of whom were experienced FFT therapists. In addition to the usual FFT training and certification, these six therapists and their supervisors received 12 hours of training provided by Dr. James Alexander, the developer of FFT, and the national consultant who provided weekly supervision during the implementation phase. A one-day follow-up training was provided by the national trainer approximately two months after the initial training.

Eighty percent (53 cases) of FFT-G cases received at least one FFT-G session, and fifty-three percent (35 cases) successfully completed the program. The most common reason for not beginning FFT-G was that the youth was placed in a residential facility prior to the first contact. FFT-G resembled regular FFT in content, intensity, and duration as well as in the percentage successfully completed. The quality and quantity of services received and the completion rates were similar for youth at low- and high-risk for gang involvement, indicating that FFT-G was successful at engaging even the most challenging youth and families.

FTTP, the family service to which control youths were referred, was far less successful at engaging families in therapy than FTT-G. Only eleven families were successfully engaged. The participating judge

subsequently referred several control families to regular FFT when it became clear that they were not receiving services from FTTP. Of the 63 control families, 13 (20.6%) received FFT. Consequences of this contamination of the experimental conditions are explored below.

Treatment context. The study population was deeply involved in Philadelphia's social service system, receiving numerous services concurrently with FFT-G. CBH records of payments for Medicaid-covered services provided during the six months following random assignment showed a majority of families in both groups received some treatment services during this period, but a higher percentage of treatment cases received at least one service (97% vs. 73%). A much higher percentage of treatment cases received FFT (86% vs. 22%) and evaluation services (59% vs. 28%), required for Medicaid reimbursement of FFT services. Control cases were more likely to receive mental health outpatient treatment (40% vs. 26%), mainly because FTTP is included in this category, and the control cases were somewhat more likely to receive residential placement (32% vs. 25%).

Costs. The total cost of all services provided to study youth during the six month period following random assignment was approximately $1.25 million. More dollars were spent on FFT-G youth than on control youth (approximately $653K vs. $569K), primarily because a much larger percentage of FFT-G youth actually received services. But the cost per youth served was lower for FFT-G youth than for control youth ($10,197 vs. $12,368) despite the added cost of FFT services (costs paid for FFT direct services were approximately $2,763 per youth who received FFT). This cost differential is largely explained by the greater use of residential placement for control than for treatment youth; mental health outpatient and case management also added substantially to the cost of services for control group members. The main conclusion from the cost analysis is that FFT services replaced more expensive services to a greater extent for treatment than for control youth, thereby reducing the cost per youth served.

Outcomes

Baseline comparisons. Comparison of baseline characteristics across the experimental groups found three significant baseline differences across 65 tests, the number of differences that would be expected by chance. The pretreatment scales that differed across groups are included as covariates in all outcome analyses.

Self-reports. At the six-month post-randomization follow-up, no significant differences between the treatment and control groups were observed on self-reported measures of the primary outcomes – delinquency and substance use – or on the mediators targeted by FFT-G – for example, improved family functioning. These results were more favorable for youth at high risk for gang involvement[2]. For the low gang risk participants none of the differences between the FFT-G group and the control group attained statistical significance. For the high gang-risk participants, however, 4 of the 9 comparisons were significant, all favoring the FFT-G group. Those who received the treatment had significantly lower levels of self-reported general delinquency, drug use, and alcohol use, and a lower percentage of this group reported spending time in residential placement.

In supplementary analyses excluding the 13 control cases who received FFT, results were more favorable for FFT-G. Most outcomes, although still not significant, favored the FFT-G group. Youth reports of general delinquency variety ($p<.10$), frequency of alcohol use ($p<.001$), and parent reports of the variety of substances used by the adolescent ($p<.10$) favored FFT-G cases. As in the ITT analysis, none of the measures of the intermediate outcomes targeted by FFT-G were significantly different, although the ES for the percent currently in a gang was moderately large ($d=-.41$) and favored the treatment group.

Official records. During the first six-month period, there was relatively little recidivism activity. Less than 20% of study participants were arrested, and approximately half of them were adjudicated delinquent. Most of the recidivism measures favored the FFT-G group, and the magnitude of some of the differences was large. For example, the percentage adjudicated delinquent was approximately 2.5 times greater for the TAU than the FFT-G cases (6% vs. 15%). The percentage with property charges and the percentage adjudicated delinquent were marginally significant (each $p<.06$), and these two differences reached conventional significance levels ($p<.05$) when the controls who received FFT were omitted.

[2] We developed a measure of "gang risk" by combining the available measures of gang involvement from the youth pre-test interview. If a youth reported ever being a gang member, currently being a gang member, having family members who were either current or past gang members, or who had close friends who are part of a gang they were coded as having high "gang risk". Youth who scored a 0 on all of these indicators are coded as having low gang risk. Of the 66 youth in the treatment group 34 (51.5%) are low gang risk and 32 (48.5 %) are high gang risk; of the 63 youth in the control group, 31 (49.2%) are low gang risk and 32 (50.8%) are high gang risk.

Again, the differences varied for low gang risk and high gang risk participants. For the low gang risk participants, only one comparison between the treated and control conditions obtained marginal significance: the percent of residential stays. For these participants however, the difference favored the control group: 27% versus 41%. In contrast, for the high gang risk participants, 7 of the 9 comparisons favored the FFT-G group and, of these, 3 were statistically significant. The FFT-G cases, as compared to the control cases, had significantly lower prevalence rates of felony charges, crimes against person charges, and property crime charges.

During the entire 18-month follow-up period, all of the recidivism measures favored the FFT-G cases. Significant or near-significant differences were found for the percentage with drug charges (11% vs. 22%, $p<.05$), the percentage adjudicated delinquent (23% vs. 38%, $p<.05$), and the percentage with property charges (14% vs. 23%, $p=.06$). The latter finding became significant at the $p<.05$ level in analyses that omitted the 13 controls who received FFT. Differences for two additional outcomes (percentage arrested and percentage with felony charges) also became marginally significant when the controls who received FFT were omitted. Again, a practically meaningful difference favoring the FFT-G cases in the days spent in residential placement was observed (191 vs. 135 days, ES = -.31).

Finally, we examine these results by gang risk status. For the low gang risk youth, the FFT-G cases had a marginally lower prevalence of drug charges, 12%, as compared to the control cases, 27%, at the 18-month mark. In contrast, for the high gang risk youth all 9 comparisons favored the FFT-G cases and 6 of the 9 are statistically significant. By 18 months after randomization, and 12 months after the end of treatment, FFT-G high gang risk participants had a lower prevalence of arrest, number of arrests, fewer felony charges, crimes against person charges, and property crime charges, and were less likely to be adjudicated delinquent. In general, the observed differences were large and clinically meaningful. For example, the arrest rate increased from 28% to 43% from the treatment to the control conditions. Also, although the difference is not statistically significant, the FFT-G cases spent less than half as many days (111 versus 265) in residential placement as compared to the control cases.

Conclusions and Implications for Research and Practice

This study tested the effects of FFT accommodated for a sample of court-involved, gang-at-risk and gang-involved youth in Philadelphia's Family Court. *The study found that the intervention was implemented with fidelity to the FFT model and was effective for reducing recidivism*. By 18 months following random assignment, all of the recidivism measures favored the FFT-G cases, and several of the differences between groups were statistically significant and clinically meaningful. The positive impact of FFT-G was maintained, and, in fact, increased, during the 12 months following the end of treatment. Also noteworthy, the intervention was most effective for reducing delinquency and substance use among the sub-group that was at highest risk for gang involvement.

Implications for research. Interview measures collected at the six-month point generally did not show significant differences between treatment and control cases in ITT analyses, but did show reductions in delinquency and substance use in analyses that excluded control youth who received FFT. Surprisingly, no FFT-G effects were observed on any of the mediators targeted by FFT-G. Gottfredson et al. (2018) discuss possible explanations for this unexpected finding. Additional research is needed to better understand the mechanisms through which FFT reduces delinquency.

Implications for practice. The study found that it is possible to prevent subsequent criminal activity in a population that is at elevated risk from joining gangs. Given the large negative impact of gang membership both on public safety and on the behavior and development of gang members, the implication for practice is clear: Expanding the use of programs such as FFT-G can be expected to reduce youth recidivism and conserve public dollars. Our study demonstrated that court-involved youth are heavily involved in social service systems. Three-fourths of control group members were receiving at least one behavioral/mental health service, paid for by public funds. The cost of these services is high. Our study demonstrated that youth who receive FFT-G are less likely to receive alternative, more costly, public services (such as residential placement) during the time they are receiving FFT-G. In this study, using FFT-G reduced the costs of services per youth served by more than $2k per youth in the six month period for which services were monitored. This direct cost savings underestimates the total cost savings that can be expected from increased use of EBPs. As we demonstrated, FFT-G reduces recidivism during at least the first 18 months following random assignment. Such crime reductions result in future cost savings. Lee

at al. (2012), for example, showed that every dollar spent on FFT for youth on probation generated $10.42 in future savings. Our results suggest that FFT-G improved youth behavior in a contemporary high risk, minority population at a large cost savings to the criminal justice system. This cost savings can be expected to grow over time. As such, we recommend that other states find ways, as Pennsylvania has, to deliver EB practices with fidelity using public funding streams such as Medicaid and to expand the use of community programs such as FFT-G to high risk youth, including gang involved youth.

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