

“The Latent Catalyst: Clarifying the Impact of Gang Behavior on Juvenile Mental Illness Within a Multivariate Context”

by

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Abstract

The majority of research on the factors that impact juvenile mental illness is contextualized in terms of exposure to violence, peer victimization and socially disorganized or criminogenic neighborhoods. While gangs factor prominently in all of these contexts, gangs are rarely discussed as a possible catalyst for the adverse early life experiences (AELE) that lead to juvenile mental illness. This paper seeks to examine the relationship between gang behavior and juvenile mental illness. This study used archival data from a community-based gang intervention program in the Southern United States to conduct the exploratory analysis. The study found that exposure to criminogenic neighborhoods and school failure were significant predictors of mental illness among study participants. Interestingly, gang activity was not a significant predictor of mental illness when tested in a traditional multivariate model due to multi-collinearity with other test variables. When models were corrected and subjected to a step-wised regression technique, exposure to criminogenic neighborhoods and school failure maintained their statistically significant impacts on juvenile mental illness. The researchers summarize that gangs may impact juvenile mental illness by serving as a latent catalyst of mental illness in socially disorganized neighborhoods.

Introduction to the Study

Childhood abuse and neglect is commonly referred to as adverse early life experiences (AELE). State child protective service reports in 2011, suggested that of the 3 million child protective reports made, 22.7% of the children were victims of abuse and neglect (Koplan & Chard, 2014). While the prevalence of childhood maltreatment is problematic in itself, the relationship between AELEs, juvenile mental illness and

delinquency presents added complexity to the problem. It is estimated that up to 75% of young delinquent offenders have a substance abuse disorder, and as many as 20% of this group also suffer from a mental health disorder serious enough to impair their daily functioning (Hunsicker, 2007).

It appears as though many of the adverse early life experiences (AELE) linked to juvenile mental illness are behaviors in which gang members frequently engage. However, the research on juvenile mental illness and AELE contains no mention of gangs as a correlate possibly due to the convoluted social ecology in which gangs exist. The problem addressed by this study is that scholars do not have a clear understanding of the impact of gang activities on juvenile mental illness. The goal of this study is to determine if gang-related behavior may have an impact on juvenile mental illness. By clarifying the role of gangs and gang-related behavior on juvenile mental illness, it may be possible to identify additional points in the deviance cycle in which to positively intervene, thereby giving juveniles an expanded opportunity of recovery.

Adverse Early Life Experiences

Several juvenile mental illness studies (Koplan & Chard, 2014; Taylor, Sullivan & Kliewer, 2013; Hagan & Foster, 2007; Jipguep & Sanders-Phillips, 2003; McMillan, 2001) suggest that exposure to adverse early life experiences impacts juvenile mental illness in multiple ways. Juveniles who live in dangerous environments or are exposed to violence have increased problems with both internalizing and externalizing behaviors (Kelly & Anderson, 2012; Taylor, Sullivan & Kliewer, 2013). Studies show that behaviors such as aggression or violence (Yu, Geddes & Fazel, 2012; Herts, McLaughlin & Hatzenbuehler, 2012; Koffman, Ray, Berg, Covington, Albarran & Vasquez, 2009; Jipguep & Sanders-Phillips, 2003), stress (Ceballo et al., 2001; Jipguep & Sanders-Phillips, 2003), risk-taking behaviors (Ceballo et al., 2001), depression (Bulhoes, Ramos, Lindert, Dias & Barros, 2013; Hagan & Foster, 2007; McMillan, 2001) and post-traumatic stress disorder (Van den Heuvel & Seedat, 2013) can all be linked to adverse early life experiences.

Additionally, there appears to be a cumulative effect of exposure to these negative situations. Research (Barclay & Hilt, 2014) suggests that the accumulation of risk factors from multiple domains may raise the risk of juveniles engaging in imminent violence. If exposure to risk factors from multiple domains serves as a risk multiplier it is necessary to examine the context in which a juvenile would be exposed to multiple domains of risk. The social context in which ALEAs exist must be included into the analysis.

Research (Aneshensel & Sucoff, 1996) shows that not only does direct exposure to danger impact a juvenile, but even the perception of danger in a neighborhood impacts an adolescent's symptoms of depression Oppositional Defiant Disorder and conduct disorder. The impact of exposure to AELEs also appear to be far more permanent than one may expect. Studies (Koplan & Chard, 2014; McMillan, 2001) suggest that juvenile mental illness caused by ALEAs may persist into adulthood in the form of alcohol and drug abuse, re-occurring depression and increased phobias. Additionally, attempts at intervention may

be more difficult once the negative internalizing and externalizing behaviors have become normalized. Freedman and Woods (2013) examined data from the Moving to Opportunity project which was designed to relocate juveniles from impoverished neighborhoods as an intervention for juvenile psychological stress. The data suggested that girls' mental health improved four years after relocation but that the mental health of boys actually worsened (Freedman & Woods, 2013).

The literature on juvenile mental illness seems to be clear as to the impact of ALEAs on juveniles who are exposed to them. While the literature does discuss unsafe or violent neighborhoods, it does not discuss the purveyors of crime and violence in these types of criminogenic neighborhoods. This appears to be an obvious omission since violence does not exist without an offender. In order to close this gap in the conceptual understanding of juvenile mental illness, it is important to include a discussion on the criminal actors in community contexts: increasingly, those criminal actors are gangs.

Gangs in the Social Context

The relationship between gangs and crime is well documented. The most recent national gang assessment reports that gangs commit an average of 48% of the violent crime in jurisdictions around the nation and as much as 90% in some extreme cases (FBI, 2011). Additionally, gang membership does not appear to be waning. The 2011 national gang assessment found 1.4 million gang members in the United States, operation in over 33,000 individual gangs (FBI, 2011). As extensive as these number are, there are critics (Valdemar, 2011) who argue that these statistics are sanitized and that criminal justice practitioners should be cautious when referring to them. The role of gangs as social malefactors is clear, but it may be helpful to examine the theoretical explanations for the existence of gangs.

Within the gang literature there are three commonly-accepted explanations for gangs in society: the selection model, the social facilitation model and the enhancement model. The selection model posits that gangs attract a certain type of person, who may be predisposed to crime due to certain personal deficits (Curry, Decker & Pyrooz, 2014: 80). While the selection model would argue that deviant individuals are attracted to gangs, the social facilitation model argues that individuals become deviant after they affiliate with gangs (Curry et al, 2014: 81). While neither of these two explanations may cover the full spectrum of membership dynamics, a third explanation seeks to merge these two perspectives. The enhancement model posits that gang membership is a blend of the selection model and the social facilitation models (Curry et al, 2014: 81). These explanations do not, however, explain the function of gangs in the social context.

For the purpose of this text, Differential Opportunity theory provides the most effective explanation of gangs in a social context. Differential Opportunity theory argues that individuals who lack the means to advance through legitimate means will seek out alternative means by which to advance and are more likely to join criminal gangs (Cloward & Ohlin, 1960: 171). While Differential Opportunity theory explains the role of gangs in society, it does not explain the impact of gang on society. It is this theoretical gap that may be filled

by Latent Catalyst theory.

Methodology

In order to develop the Latent Catalyst theory it was necessary to first substantiate the relationship between gang exposure and juvenile mental illness. Research (Witkiewitz, King, McMahon, Wu, Luk, Bierman, Coie, Dodge, Greenberg, Lochman & Pinderhughes, 2013) have examined the latent structures of externalizing behaviors in juveniles. Therefore, it may be possible for any number of latent affects to exist within the urban environments that are not readily understood by scholars. The researchers reasoned that if the latent catalyst concept truly existed, it should be possible to test for the correlation between gang exposure and juvenile mental illness, given that the dataset in question contained the required variables. This study selected archival data from the Project Building, Uplifting, Impacting, Lives in Durham (BUILD) to substantiate the relationship. B.U.I.L.D. serves youth populations between the ages of 14-21; its main focus is gang and potential gang members by directly pairing them with educational, employment, mentors, and pro-social role modeling in Durham, North Carolina (Project BUILD, 2009).

After obtaining IRB clearance, the archival data were de-identified and checked to verify that no identification could be made from a combination of variables remaining in the dataset. Since Project BUILD offers multi-dimensional services and support, the data contained many of the situational and personality variables required to substantiate the finding in the literature. This study was a cross-sectional, exploratory analysis. The study identified five variables (juvenile mental illness, exposure to criminogenic neighborhood, family dysfunction, school failure and gang activities) from the dataset.

The dependent variable, Juvenile Mental Illness, was measured using a 6-item index. The index assessed whether or not the participants had experienced 1=early aggression, 2=hyperactive, 3=poor refusal skills, 4=other mental health problem, 5= life stressors and 6=authority conflict. The range of the scale was from 0, having no mental illness symptoms to 6, having extensive mental illness symptoms ($= .586$, factor threshold $>.400$).

The study also measured Exposure to Criminogenic Neighborhoods. The data contained items which measured: 1=juvenile's perception of their neighborhood as unsafe, 2= perception of high crime in their neighborhood, 3= availability of firearms in their neighborhood, 4= presence of delinquent youth in the neighborhood, 5= perception of neighborhood as disadvantaged and 6= access to drugs in the neighborhood. The range of the index was from 0, having a perception of living in a non-criminogenic neighborhood to 6, having the perception of living in a criminogenic neighborhood ($= .901$, factor threshold $>.400$).

Family Dysfunction was also measured using an index of items in the dataset. The index items were as follows: 1=broken home/ change in caretaker, 2=family history of problem behavior, 3=delinquent/ gang-related siblings, 4=having a young mother, 5=low attachment to child, 6=low parent education and 7=child maltreatment. The scale was from 0, having no family dysfunction to 7, having the highest degree of family dysfunction ($= .527$, factor

threshold $>.400$).

The School Failure index contained the following items: 1= low achievement in elementary school, 2= frequent truancy/ suspensions, 3= identified as learning disabled, 4= low school attachment/ bonding 5= poor school attitude/ motivation, 6= poorly organized and functioning schools, 7= low academic aspirations, 8= low attachment to teachers, 9= low parental college expectation for child and 10=low math achievement test score. The index was from 0, having no school failure to 10, having the highest degree of school failure ($= .679$, factor threshold $>.400$).

Gang activities contained the following items: 1= association with delinquent peers, 2= gang-involved peers/ activities. 3= general delinquency, 4= violent behavior, 5= physical violence, 6= illegal gun ownership/ carrying and 7= violent victimization. The index produced a range from 0, having participated in no gang activities to 7, having the high degree of gang participation ($= .780$, factor threshold $>.400$). The study finally measured four demographic variables: age, sex, ethnicity and gang membership.

Study Findings

The majority of respondents were male (85.0%, $n=68$) and Black (61.3%, $n=49$). Approximately 80% of the respondents also claimed gang membership. The descriptive statistics revealed that the respondents scored in the lower range of each study measure. This suggests that the participants were not chronic offenders. The mean score on the juvenile mental illness index was just 3.31 on a scale of 0-6. Interestingly, the mean score on the gang activities scale was only 1.43 on a scale from 0-7. This suggests that the respondents may not have engaged in a wide variety of gang-related behaviors. These findings may be due to the ages of the respondents. Younger individuals may not have had opportunities to commit a variety of gang crimes; mental illnesses may also not have developed as extensively in younger individuals as in older individuals who have been exposed to negative stimulate over a longer period of time (See Table-1).

Due to the reliance on indices to measure the study variables, it was necessary to compute a bivariate correlation as a diagnostic for collinearity. Collinearity occurs when two composite measures are actually measuring the same underlying construct. Table-2 shows that only one of the variable relationships produced a collinear relationship. The relationship between Gang membership and Gang Activities was collinear ($r=.905$, $p=.000$). While this relationship was expected, the variable Gang membership was removed from the multivariate models in order to avoid statistical interactions which may lead to false significance levels (See Table-2). The substantiation analysis was conducted using Ordinary Least Squares Regression.

Prior to computing the substantiation model, a specification model was tested. The specification model regressed the study variables: gang activities, school failure and family dysfunction on juvenile mental illness. The Specification model also included a set of variables which are commonly correlated with juvenile mental illness (delinquency, association with deviant peers, substance abuse). While the overall model was statistically

significant ($F= 8.155$, $p= .000$) and explained 35.2% of the variation in juvenile mental illness ($R^2= .352$), several of the independent variables were not found to be statistically significant. The impact of gang activities ($b= -.047$, $p= .769$), association with deviant peers ($b= .111$, $p= .554$), substance use ($b= .200$, $p= .120$) and family dysfunction ($b= -.016$, $p= .869$) were not statistically significant (See Table-3). The researchers examined the regression diagnostics and discovered that the specification model was suffering from multicollinearity.

table 1 here

Multi-collinearity occurs when two or more independent variables in a regression model combine to approximate a third variable in the model. Multi-collinearity can damage the validity of multivariate findings in much the same way collinearity does. By examining the Variance Inflation Factors (VIF) and Tolerance (See Table-3) it became clear that gang activities (TOL=.325, VIF= 3.081), association with deviant peers (TOL= .236, VIF= 4.235), and substance use (TOL= .510, VIF= 1.960), all had VIF and Tolerance values

that deviated from the 1.00 norm and were multi-collinear. This suggested that these variables should either be collapsed into a composite measure or removed from the regression model. Due to coding limitations in the data, the variables could not be scaled together. Instead, the researchers chose to re-specify the model.

table 2 here

table 3 here

The substantiation regression model regressed the study variables on Juvenile Mental illness. The substantiation model was statistically significant ($F=9.509$, $p=.000$). The re-specified model explained 33.6% of the variation in juvenile mental illness ($R^2=.336$). Both exposure to criminogenic neighborhoods ($b=.344$, $p=.002$) and school failure ($b=.367$,

$p = .000$) were significantly related to juvenile mental illness. Interestingly, neither the participation in gang activities ($b = .007, p = .949$) nor exposure to dysfunctional family ($b = .044, p = .650$) was significantly related to juvenile mental illness (See Table-4).

table 4 here

Next the researchers examined only the variables that consisted of the respondents' perceptions of their structural environment. For this analysis, the compound measure, criminogenic neighborhood, was disaggregated. The Structural Effects model was run using dummy regression techniques due to the binary coding of each predictor variable.

The structural effects model regressed high crime area, low neighborhood attachment and unsafe neighborhood on juvenile mental health symptoms. Table-5 shows that while the overall model was statistically significant ($F = 9.309, p = .000$), the model only explained 24% of the variation in the juvenile mental health symptoms ($R^2 = .240$) compared to the re-specified model which explained 33.6% of the variation in juvenile mental health symptoms ($R^2 = .336$). Again the researchers identified multi-collinearity problems with the structural variables. The regression diagnostic suggested that the variables perception of High Crime Neighborhood ($TOL = .429, VIF = 2.331$), and perception of Unsafe Neighborhood ($TOL = .439, VIF = 2.276$), were multi-collinear (See Table-5).

The preceding analysis seems to suggest several considerations when attempting to isolate the impact of gang behavior on juvenile mental illness.

Study limitations

This study experienced several limitations that merit discussion. The first study limitation was the use of archival data. While using the archival data was necessary to begin to probe this issue, the variables were not as well-constructed as they might have been by using primary data. The archival data forced the researchers to use indices as composite measures in situations where scales would have provided more in-depth measurements. This reliance on indices lead to another minor limitation: the low reliability statistics for three of the study measures.

table 5 here

Mental illness ($= .586$), family dysfunction ($= .527$) and school failure ($= .679$) all had reliability coefficient below the $.700$ threshold of reliability. These low reliability scores may have been due to the use of indices which were all comprised of binary items. Despite the low reliability coefficients, the items in all of the indices loaded at or above the $.400$ threshold and were found to be valid.

The exploratory nature of the study also limited the application of the findings. The researchers are not able to generalize the findings to external populations and are therefore limited in external validity. However, the decision was made to explore the correlations in the hopes of developing a deeper insight into the relationship between gang behavior and juvenile mental illness. Despite these study limitations, the study yielded important findings.

Discussion

Gang behavior appears to have a dualistic impact on juvenile mental illness, depending on the exposure dynamic. The data suggested that there was a direct relationship between exposure to criminogenic neighborhoods and juvenile mental illness ($b = .344, p = .002$). This suggests that as exposure to criminogenic neighborhoods increases so does the severity of juvenile mental illness. This finding was consistent with the broader literature on the issue. When examining the elements that comprise a criminogenic neighborhood: unsafe neighborhood, high crime, availability of firearms, presence of delinquent youth, and access to drugs, gangs contribute to all of these components. It is possible that the first type of impact gang may have on juvenile mental illness is as a latent catalyst.

If scholars concede that juvenile mental illness can be caused by adverse early life experiences such as exposure to crime and violence, and data consistently show that gangs are the purveyors of these behaviors within neighborhoods, then the logical chain of causality seems to imply that gangs may serve as the catalyst for juvenile mental illness. It is important to exercise caution when making the previous statement. The impact of gangs on juvenile mental illness is achieved through the systematic crime and violence to which the juvenile is exposed. It is for this reason that the gang is conceptualized as a latent catalyst not a direct catalyst. Additional support may be provided by a second statistically significant relationship

found in this study.

There was a significant relationship between school failure and juvenile mental illness ($b = .367, p = .000$). These data suggest that as school failure increases so do the incidences of juvenile mental illness. It is important to note that the temporal order of this relationship is not clear. It is possible increased juvenile mental illness may in-turn lead to increased school failure. In either event, gangs are still a component of the causality model. The literature on gangs in school has demonstrated that gangs represent the same type of disruptive force in schools as in the community at-large. This suggests that gangs would again serve as a latent catalyst within the school system. There were two relationships in the study that did not produce statistically significant relationships.

Family dysfunction was not found to have a significant impact on juvenile mental illness ($b = .044, p = .650$). One might expect exposure to a dysfunctional family situation to have a pronounced impact on juvenile mental illness. However, that was not the case with these participants. It is possible that the family dysfunction experienced by the participants simply was not severe enough to have engendered mental illness. It is also possible that the participants placed low value on their familial relationships which would have reduced the importance and impact of family dysfunction. Perhaps the most unexpected non-significant finding was with respect to gang activities.

Gang Activities produced no significant impact on juvenile mental illness ($b = .007, p = .949$). The data suggested that participation in gang-related deviance did not lead to the production of juvenile mental illness. However, it is possible that due to their relatively young ages, these participants had only been gang members for a short period of time and the impact of gang activities had not yet manifested itself in the subjects. This remains one of the more interesting study findings, primarily because it raises another question. Should the participation in organized deviance have an impact on mental illness? Ostensibly one may assume that it should but that assumption may not be well founded. The human psyche has several protective functions that it uses to assist humans in dealing with traumatic experiences. For example, when experiencing especially painful events such as child birth or extreme torture, the human mind blocks out the detailed memories of the pain. Victims of especially traumatic vehicle accidents often cannot recall details of the incident. What is certain is that the mental illness that accrues to the victims of gang behavior is substantiated. This and other findings led the researchers to develop some conclusions and recommendations.

Recommendations and Conclusions

The researchers recommended further research examining the relationship between gang activities and juvenile mental illness. Additional research should pay close attention to the conceptualization and operationalization of the study concepts and guard against multicollinearity threats. Additionally, future research should also examine this relationship at the structural level.

Perhaps future studies could examine the proportions of mental illness and gang

members that exist within various geographical locations. While the relationship would not be causal in nature, it would provide a larger structural context to the issue and help increase the scholarly understanding of this issue.

While this study was exploratory in nature and therefore not designed to be generalized to external populations, future studies need to use probability sampling designs to create a measure of generalizability. If these relationships are found to be stable across populations and geography, it will be vitally important to determine their representation in the general population.

In the past two decades, gang research has increased criminologists' understanding of gang crime and membership exponentially. However, in order to truly understand the complex phenomena of gangs, scholars must begin to examine the impact gangs have on those around them. The evolution of gang research may lie in the study of the impact of gang behaviors on those exposed to gangs and even gang members themselves.

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