

The Impact of Maternal Incarceration on Emotional and Behavioral Outcomes: Research Findings from a National Longitudinal Study on Adolescent Health

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Received: November 17, 2016; Accepted: December 29, 2016; Published: January 7, 2017

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Abstract

Data for this study were drawn from quantitative analyses derived from secondary statistics from the National Longitudinal Study of Adolescent to Adult Health (Add Health), which is a longitudinal study of a nationally representative sample of adolescents in grades 7-12 in the United States to examine the impact of maternal incarceration on emotional and behavioral outcomes among adolescents. It was hypothesized that maternal incarceration would increase the number of risk factors among adolescents including delinquency, victimization, emotional outcomes and drug usage. For this project, the survey data were analyzed on self-identified non-white (minority) participants reporting criminal justice involvement measured through lifetime arrest, age at first arrest, number of pre-18 arrests and number of post-18 arrests as behavioral outcomes. Measures of self-reported depression and anxiety were also included to examine mental health outcomes. Results from hierarchical multiple linear regressions indicated that having a mother incarcerated explains variance in emotional outcomes and behavioral risk influences such as symptomatology, criminal involvement, and drug use over and beyond sociodemographic factors including gender, educational level and family income. Policy implications and suggestions for future research are addressed.

Keywords: Maternal Incarceration, Emotional Outcomes, Behavioral Outcomes, Adolescence

Introduction

The United States has the highest incarceration rate in the world, and an estimated 52% of state and 63% of federal inmates reported being parents to 1.7 million children [11]. The increase of incarcerated women has negatively affected American families; nearly two-thirds incarcerated women in state prisons in 2007 were mothers [16][5]. While there is a growing body of literature studying the effects of incarceration on children, much of this research has focused solely on either incarceration in general or on paternal incarceration. These studies have revealed that youth whose parents were imprisoned at some time were nearly five times more likely to be incarcerated in adulthood compared to youth separated from parents for other reasons [18].

As studies repeatedly show an increase in the rates of detainment among women, findings also indicate that maternal incarceration has been associated with inappropriate and inconsistent discipline, youth problem behaviors, and serious delinquency [10][16][7]. Research has also illustrated that mother's incarceration is associated with instability among children, many of whom are less likely to complete their education and are more likely to be incarcerated themselves in later adulthood [12][18][7]. High levels of delinquency among this group suggests that generational patterns of violence may exist among the youth who live in the homes of incarcerated mothers [12], and social interaction often defines how parental incarceration, family functioning, parenting strategies, and child adjustment might be correlated [10].

Maternal Incarceration and Problem Behavior

Scholars similarly continue to illustrate an association between maternal incarceration and adverse outcomes for offspring. [16], for example, observed the growth in female incarceration to further understand the long-term consequences of imprisonment on children. Their research utilized data derived from the National Longitudinal Survey of Adolescent Health to examine the impact maternal incarceration has on criminal justice involvement among young adults. The key findings demonstrated that maternal incarceration had a statistically significant effect on the children's adult involvement in the criminal justice system, which was measured by arrest, conviction, and incarceration [16]. [10] Examined serious delinquency among youth and the associations between parental incarceration, family functioning, parental health, effective parenting, and youth problems. Adolescents who experienced parental incarceration during their childhood were more likely to experience family risk in the areas of social advantage, parent health, and effective parenting, as well as having higher levels of problem behavior across adolescence than those adolescents who did not experience parental incarceration.

[12] Examined the relationship between children's behavioral outcomes and life events among incarcerated mothers.

The focus of this study was to examine the behavioral outcomes among children of incarcerated mothers and the extent to which economic stability and living arrangements differ among the population. The data collected were derived from a sample of 200 recently released from prison inmates and questions relating to life events or stressors are derived from a survey addressing mother's employment status, hardships with finding a job, and the effects of residing in a bad neighborhood on parenting issues. Questions explaining the behavioral outcomes of the children were measured with mothers' reports of common reactions such as difficulty in school and anger resulting from perceived abandonment. Findings indicated that maternal incarceration was correlated with higher rates of maladjustment among children including behavioral problems in school and PTSD symptomatology. A positive relationship was also observed between lengthy separation and children's behavioral problems in school. The findings of this study point to the importance of examining the impact of maternal incarceration on children, many of whom are at a higher risk of antisocial, delinquent behavior. The authors further suggest that among children who are already at risk for delinquency, the likelihood of offending increases during and after the mother's detainment. Here, [12] concluded that children's behavioral problems were more closely associated with issues relating to being separated from and having limited contact with their mothers during incarceration and that research should include a critical evaluation of existing programs focusing on recidivism in order to assess what works effectively.

Maternal Incarceration and Drug Usage

Research has also emphasized that parental incarceration may leave a child more vulnerable to persistent drug use. Hence, children are more likely to depend on drugs as a method to cope with the shame associated with having a parent incarcerated [9] [21]. Analyses of the National Longitudinal Study of Adolescent to Adult Health (Add Health), determined that having a father incarcerated increased the frequency of marijuana use by a factor of 1.77 for male children and a factor of 1.75 for female children [21]. Similarly, the potential impact of maternal incarceration on children's drug use has been evidenced in that slightly more than 1 percent of incarcerated mothers were concerned about drug problems among their children.

[9] Extended current research to determine the impact of parental incarceration on three key outcomes among children of incarcerated parents including drug use. More than half of incarcerated mothers reported in the study that they had used alcohol or drugs in front of their children, leading to concerns about the children's prospective substance abuse. More specifically, children with an incarcerated mother were twice as likely to have used drugs compared to children who did not have an incarcerated parent. Parental incarceration groups in this study also used drugs at an earlier age compared to those who did not experience the incarceration of a parent. Lastly, [9] work showed that the children of incarcerated parents were more than 3 times as likely to qualify for substance use disorders by late adolescence as those who did not have a parent incarcerated.

Similarly, [17] examined the direct effects negative family factors had on adolescent alcohol and marijuana use, while observing the mediating effects of peer delinquency, poor school performance, depression and anxiety. Their research was based upon additional work showing that individuals tend to display attitudes and behaviors that are learned, whether it is deliberately or inadvertently [1]. The study focused on key variables such as age, gender, race, and socio-economic status, and found that juvenile delinquency correlated highly with parental criminality, particularly for older, male, minority adolescents of lower SES backgrounds. Studies such as these are particularly relevant in discussions of youth adjustment outcomes since drug abuse is the primary reason many women enter prison [8] placing children at risk for future drug use. [17] Found that adolescents from families that used drugs had nearly twice the odds of using substances compared to adolescents who did not have families that used drugs.

Maternal Incarceration and Symptomatology

[11] Aimed to extend previous literature by comparing prevalence of physical and mental conditions in a nationally representative sample of young adults who were and were not exposed in childhood to parental incarceration. Parental incarceration was highly associated with 8 of 16 health conditions (health disease, asthma, migraines, depression, anxiety, posttraumatic stress disorder, HIV/AIDS, and fair/poor health). Respondents who reported paternal incarceration had the highest prevalence rates of 3 of the 8 health conditions (heart disease, HIV/AIDS, and fair/poor health), whereas individuals who reported maternal incarceration were highest on 2 conditions (depression and anxiety). Those who reported incarceration of both parents were highest on 3 conditions (asthma, migraine, and PTSD). The findings of this study suggest that individuals with a history of parental incarceration have a higher prevalence of health problems, emphasizing the need for additional research on mechanisms linking parental incarceration to both physical and mental health outcomes related to childhood adversity.

Additionally, [3] investigated the impact of incarceration-specific risk experience (ISRE) and general environmental risk (GER) on internalizing and externalizing problems in a sample of children of incarcerated mothers. The results of the study indicated that when children experienced more negative experiences associated with maternal incarceration while controlling for GER, their internalizing and externalizing behavior problems were higher. Their findings suggest that it is critical to assess multiple, specific experiences children have that are related to their mother's incarceration in order to understand how these stressors impact psychological functioning. [20] Found that children with a history of exposure to arrest had greater impairments in internalizing and externalizing behaviors than those children without previous exposure to arrest. The findings also supported the hypothesis that the influence of trauma exposure on children varies by age. Children of incarcerated parents were more likely to experience stigma, bullying, and teasing because of their parent's imprisonment [18] [20]. The findings suggest that there is a need for programming focused on strengthening the parent-child

bond to alleviate some of the disruptions that may occur in children's attachment relationship as a result of arrest [20].

Research has found that children of criminally involved mothers are more likely to be exposed to violence in the home, substance abuse, and to live in poverty [6]. Because of the extended exposure, children of incarcerated mothers tend to face higher risk of developing mental health needs that require treatment services [22] [23].

The purpose of our study is to address behavioral problems and psychological maladaptation among African American and other minority children and adolescents, and the extent to which these patterns differ among those with incarcerated mothers and those without incarcerated mothers. This study extends current investigations on patterns of coping and adjustment, crime control policy and inequality among minority children and mothers in prison to examine the linkage between juvenile justice involvement, depression/anxiety symptomatology, and maternal incarceration as risk factors among a sample of adolescents. Our hypothesis is Minority adolescents who experience maternal incarceration during their childhood will experience higher levels of problem behavior and mental health problems as emotional outcomes/psychological maladaptation over and above sociodemographic factors including gender and those characteristic of reduced social class (extreme poverty). This hypothesis will guide recommendations for strategies to reduce the negative developmental outcomes experienced by children with incarcerated mothers.

When examining the "at-risk" population of children with incarcerated mothers, studies have found higher rates of difficulties with externalizing emotions such as aggression, problem behaviors, and delinquency exhibited in both schools and surrounding communities. Further, internalizing symptoms such as depression, fearfulness, sleep problems and low self-esteem remain principal in this regard. Children with incarcerated mothers possess higher levels of anxiety and depression, and they are more likely to associate with negative peers while experiencing problems in school [2] [13]. Research also shows that children of incarcerated mothers reported long-term trauma due to the separation, and are more likely to experience emotional detachment from their new caregivers, regardless of their relationship to the caregiver. A substantial number of these children demonstrate symptoms of post-traumatic stress disorder, including depression, feelings of anger and guilt, and upsetting flashbacks associated with their mother's incarceration [4].

Although there is much research examining parental incarceration in general and male children's emotional and behavioral outcomes, less is known about how these outcomes are associated with children and adolescents specifically, mainly those with incarcerated mothers, particularly over time from adolescence to adulthood. Additionally, while there are numerous studies that have examined the impact of father's incarceration on overall family well-being and functioning, less is known about the impact of mother's detainment and subsequent

reentry on children's adjustment. African American women, in particular, continue to be disproportionately confined within the criminal justice system (Sharp and Erickson, 2003), and their families, in turn, are devastatingly affected. These women are more than twice as likely to be incarcerated as Caucasian women, and they are more likely to receive longer prison sentences with less opportunity for probation and parole. They also retain a higher record for holding the fastest rates of incarceration than any other racial-ethnic group [25] and they are typically very young, undereducated and less likely to be employed compared to their counterparts who were never incarcerated [19] [14]. They also tend to remain single and impoverished prior to their incarceration and upon reentry. Research has also shown that their economic instability leads to a higher risk of continual exposure to violence that not only impacts their well-being but the well-being of their children.

In this study, we will test the effects of maternal incarceration on risk factors (emotional and behavioral) using wave 4 of data from the National Longitudinal Study of Adolescent Health (Add Health). In particular, we examine whether part of the reason adolescents are at risk of behavioral and emotional problems is a result of maternal incarceration beyond broad demographic factors including sex, educational level and family income. Specifically, we observe adolescents who move into adulthood since they have higher rates of domestic disturbance, violent victimization, emotional adjustment and behavioral outcomes [14]. Hence, the current study advances previous research by examining the trajectory or pathway to emotional difficulties and problem behaviors among adolescents with incarcerated mothers by inspecting patterns across time using longitudinal data.

Method

Data

Data for this study were drawn from quantitative analyses derived from secondary statistics from the National Longitudinal Study of Adolescent to Adult Health (Add Health), which is a longitudinal study of a nationally representative sample of adolescents in grades 7-12 in the United States. The Add Health cohort has been followed into young adulthood, and the most recent was in 2008, when the sample was aged 24-32. Add Health combines longitudinal survey data on respondents' social, economic, psychological and physical well-being with contextual data on the family, neighborhood, community, school, friendships, peer groups, and romantic relationships, providing unique opportunities to study how social environments and behaviors in adolescence are linked to health and achievement outcomes in young adulthood. For this project, the survey data were analyzed on self-identified non-white (minority) participants reporting criminal justice involvement measured through lifetime arrest, age at first arrest, number of pre-18 arrests and number of post-18 arrests as behavioral outcomes (N=1,438). Measures of self-reported depression and anxiety are also included to examine mental health outcomes. Comparative analyses of the aforementioned variables are conducted across dimensions of

maternal incarceration, whereby respondents were classified according to maternal incarceration status using the question: "Has your biological mother ever spent time in jail or prison?" The intent is to highlight the behavioral and mental health challenges for children and adolescents exposed to the arrest and subsequent incarceration of a mother, while adding to the knowledge of how these events differ across diverse developmental periods to assist children and families experiencing maternal incarceration.

Measures

There were four criminal justice related outcomes incorporated into the analysis that were dichotomized to include "yes" and "no" responses to the following: "I have pulled a knife or gun on someone," "I have shot or stabbed someone," "I have been arrested by the police," and "I have been incarcerated." Responses were combined to create a criminal involvement scale whereby a higher score denotes increased participation in crimes (Cronbach's alpha=. 737). A total of three victimization related measures were analyzed with the items: "I have seen someone shot or stabbed," "Someone has pulled a knife or gun on me," and "Someone has shot or stabbed me." As with criminal involvement, responses were dichotomized to include "yes" and "no" responses to develop a victimization scale whereby a higher score denotes increased victimization, both direct and indirect (Cronbach's alpha=.825). Drug usage was measured with the items, "I have used marijuana," "I have used cocaine," and "I have used other illegal drugs." Responses were coded 0 for those who reported not ever having used the specific drug and 1 for those who confirmed they had used the specific drug. Cronbach's alpha was equal to .727 for the three items to create drug scale whereby a higher score denotes increased drug usage. The final outcome of interest for this study was a measure of symptomatology consisting of three items including "I have been diagnosed with depression," "I have been diagnosed with anxiety, and "I have been diagnosed with PTSD symptoms." Cronbach's alpha was equal to .70 for the three items to create a symptomatology scale whereby a higher score denotes increased mental health problems.

Results

Descriptive analyses were conducted for the entire sample, and for the subset of adolescents who were exposed to a mother who had been arrested, jailed or imprisoned. Among the group who had an incarcerated mother, their mothers were imprisoned when they were approximately 12 years of age and the mean length of mothers' incarceration lasted nearly 4 years. Additionally, results showed that among the sample of non-white (minority) youth specifically, 56.1% were female, 15.9% did not receive a high school diploma, certificate or high school equivalency (GED), 5.3% reported having had a mother in prison, and the average yearly earnings as a measure of family income was \$29,086.42.

To examine the importance of maternal incarceration for behavioral and emotional adjustment outcomes, hierarchical multiple regressions were used. Gender, educational level and family income (as social class measures) were entered first as background sociodemographic factors, followed by maternal

incarceration. Consistent with previous research on gender differences, results in Table 1 show that adolescent females are less likely to report criminal involvement, although results show no effect of measures of social class as predictors of criminal involvement for this group. When entered in the next steps, both gender and maternal incarceration add a significant amount to the explained variance in criminal involvement with adolescents being more likely to report higher rates of criminal involvement if they had a mother who had been incarcerated. Results in Table 2 show that adolescent females and those with a higher family income are less likely to report victimization although results show no effect of the measure of educational level as a predictor of victimization for this group. When entered in the next steps, both gender and family income remain significant but do not add a substantial amount to the explained variance in victimization. Additionally, maternal incarceration does not impact the likelihood of reports of victimization. Findings in Table 3 reveal

Table 1: Hierarchical Multiple Regression Analysis Predicting Adolescent Criminal Involvement from Specific Sociodemographic Background Factors and Maternal Incarceration Status

Step/Predictor	Beta	R ²
Model 1		
Gender	-.189**	.060
Educational Level	-.095	
Family Income	-.106	
Model 2		
Gender	-.206***	.080
Educational Level	-.088	
Family Income	-.099	
Maternal Incarceration	.142**	

*The relationship is significant at the .05 level.
**The relationship is significant at the .01 level.
***The relationship is significant at the .001 level.

Table 2: Hierarchical Multiple Regression Analysis Predicting Adolescent Victimization from Specific Sociodemographic Background Factors and Maternal Incarceration Status

Step/Predictor	Beta	R ²
Model 1		
Gender	-.122***	.042
Educational Level	.001	
Family Income	-.175***	
Model 2		
Gender	-.122***	.042
Educational Level	.001	
Family Income	-.174***	
Maternal Incarceration	.005	

*The relationship is significant at the .05 level.
**The relationship is significant at the .01 level.
***The relationship is significant at the .001 level.

that adolescent females are less likely to report drug usage consistent with previous research, although results show no effect of measures of social class as predictors of drug usage for this group. When entered in the next steps however, gender, family income and maternal incarceration add a significant amount to the explained variance in criminal involvement with adolescents being more likely to report higher rates of drug usage if they had a mother who had been incarcerated. They are also more likely to report higher rates of drug usage with increased income. Finally, consistent with previous research on gender differences, results in Table 4 show that adolescent females are more likely to report symptomatology including PTSD, anxiety and depression, and those reporting a higher income level are less likely to report symptomatology. Results show no effect of educational level as a measure of social class to predict of symptomatology for this group. When entered in the next steps, gender, family income, and maternal incarceration add a significant amount to the explained variance in criminal involvement with adolescents

being more likely to report higher rates of symptomatology if they had a mother who had been incarcerated. In sum, results show that for criminal involvement, drugs usage and symptomatology, maternal incarceration explained variances over and above sociodemographic factors as measured by gender and social class indicators. As these outcomes display, accounts of depression, anxiety and PTSD symptomatology as well as drug usage and criminal involvement are higher when adolescents report having had a mother in prison, which is consistent with previous research. Indicators of victimization, however, did not differ significantly across maternal incarceration status suggesting greater support among this group for the impact of mother’s incarceration on emotional and behavioral outcomes, but not direct and indirect victimization.

Discussion

The intent of this study was to connect past research on the deleterious effects of maternal incarceration on children’s adjustment to the extended analyses. For example, [13] in their study of mother’s problems associated with reentry, found that women newly released from correctional facilities were likely to report problems with living arrangements, economic stability and children’s behavior resulting from cumulative disadvantage and marginalization. There was also a statistically significant relationship when comparing indicators of family disruption relating to mothers’ anticipated incarceration and children’s negative outcomes [13]. Their findings also showed a statistically significant relationship when comparing indicators of economic hardships related to mothers’ release from correctional institutions and children’s negative outcomes. Children’s externalizing symptoms (i.e., behavioral problems) were more closely associated with issues relating to lengthy separations from, and limited contact with their mothers during incarceration than were internalizing symptoms (i.e., anger at mothers for leaving). The results of the study have also shown that the impact on emotional outcomes and behavioral problems is enhanced when adolescents report that their mothers have been incarcerated. As the numbers of children with mothers in prison continue to increase, researchers have noted greater economic, residential and developmental risk factors that often lead to increased behavioral problems among this population of youth. Minority children and adolescents, in particular, are placed at a disadvantage due to the structural conditions in society, producing poor mental health, educational disparities, fewer material resources, and frequent contact with the juvenile justice system [13] [24]. Moreover, these conditions are further exacerbated when a parent, particularly a mother who was the sole provider of her children, is incarcerated, and many of these same problems continue to persist after her release as new issues pertaining to reentry arise. In many instances, as mothers struggle to compensate for lost income or lost child support upon their release, their children are then faced with such conditions as emotional problems, stigmatization by peers and teachers, reduced academic performance, poor adaptive strategies, low self-esteem or delinquent problem behavior [14].

Hence, this study addresses the policy implications relating

Table 3: Hierarchical Multiple Regression Analysis Predicting Adolescent Drug Usage from Specific Sociodemographic Background Factors and Maternal Incarceration Status

Step/Predictor	Beta	R ²
Model 1		
Gender	-.139***	.026
Educational Level	-.047	
Family Income	.057	
Model 2		
Gender	-.141***	.029
Educational Level	.043	
Family Income	.062*	
Maternal Incarceration	.057*	

*The relationship is significant at the .05 level.
**The relationship is significant at the .01 level.
***The relationship is significant at the .001 level.

Table 4: Hierarchical Multiple Regression Analysis Predicting Adolescent Symptomatology from Specific Sociodemographic Background Factors and Maternal Incarceration Status

Step/Predictor	Beta	R ²
Model 1		
Gender	.114***	.028
Educational Level	.029	
Family Income	-.108**	
Model 2		
Gender	.112***	.035
Educational Level	.035	
Family Income	-.100**	
Maternal Incarceration	.092**	

*The relationship is significant at the .05 level.
**The relationship is significant at the .01 level.
***The relationship is significant at the .001 level.

to the collateral consequences of the incarceration of mothers as their children are placed at greater risks for emotional and behavioral problems. It has been demonstrated from the research findings that the children of incarcerated mothers face hardships not experienced by other urban families, and the findings also show the necessity of first identifying mothers at incarceration as immediate risks for hardship and instability, followed by the identification of the child's or adolescent's risk for increased aggression, anxiety and/or depression. Our research points toward the need for greater services at the community, state, and federal levels for the urban children of incarcerated mothers to ameliorate material hardship and assure the stability of resources and to extend current policies and procedures relating to the removal of the mother from the home as a crisis event that immediately impacts children. Our findings also address the need for continued assistance and age-appropriate mental health and behavioral services for the children of these mothers who are at the greatest risk of poor developmental outcomes, and to develop additional strategies to reduce income inequality to allow these women to sustain their families after incarceration.

Many incarcerated mothers serve time for low level drug offenses and are faced with punitive policies regarding parole and reentry. Further, they are less likely to receive family reunification and other courses while incarcerated to assist them with effective parenting upon their release [15]. This is particularly problematic for minority children and adolescents, who are nine times more likely than white children and adolescents to have an incarcerated mother. Specific parenting and family needs of these mothers, in particular, are rarely addressed as child welfare workers, case managers, and criminal justice personnel grapple with the tasks of providing effective services to these women and their children. While there has been some legislation to restrict the length of time children remain out of home before parental rights are terminated, and we have seen greater provisions to mentor children with incarcerated mothers, many of these children remain in the child welfare system, and are often immediately placed in foster care upon the mother's arrest [15]. This becomes predominantly challenging as researchers continue to gather information that shows that the well-being and development of these children is compromised as a result of maternal incarceration. Many of these women are expected to parent effectively upon their release as they themselves become re-socialized in a society that stigmatizes them as ex-offenders. Further, issues of prison visitation and in-prison strategies to promote positive parenting remain principal in this respect.

In an effort to explain the negative outcomes associated with maternal incarceration, the strain theoretical perspective suggests that crime and delinquency often result from the structural and individual tension placed on members of society. The viewpoint addresses the processes at the societal level which filter down and affect how the person perceives his or her needs. Specifically, if particular social structures are inherently inadequate or there is inadequate regulation due to a mother's incarceration, this may change the child's perceptions as to means and opportunities. Further, the legitimate means for achieving

material success are not uniformly distributed among poor children in poor families, including those with mothers in prison [15] [22]. In other words, these children have considerable less access to legitimate means than do those who are economically advantaged. As a consequence, anomie, or strain, is generated and produces certain 'modes of adaptation', or (simply put) coping strategies, that the disadvantaged children use to deal with the pressures that are brought to bear on them. In this instance, the status and frustration that children experience as a result of the mother's circumstance, coupled with the stigmatization of maternal incarceration, may compel children to act out their aggressions in home and at school and internalize symptoms such as anxiety and depression.

While we understand that the findings from this study cannot affect policy change across the full population of children impacted by the incarceration of their mothers, we do anticipate that these results will shed new light on the circumstances of children, poor and minority children in particular, who frequently bear the burden of punitive policies. Additionally, this study highlights the impact of maternal incarceration on the developmental and social outcomes that should be of great concern to communities, school, and policy makers as the rates of problem behavior and emotional difficulties continue to increase for this population. In many instances, the initial exposure to the arrest of a mother is not fully recognized as a potentially traumatic event that can spiral into severe emotional and behavioral difficulties for the children. It is expected that our findings will inform judicial and legislative policies to mitigate the impact of the child's exposure to the mother's arrest and prompt the review of procedures to ensure effective protocols to protect children in these situations. Comprehensive trauma screening and assessment remain dominant as do service training across dimensions of age and developmental level of the children impacted by maternal incarceration, who remain at the greatest risk for behavioral and emotional challenges. Finally, we anticipate that these results will point toward the need to develop interventions appropriate for the child's and stage in life and to continue efforts to change the overall structure to provide greater economic opportunities for families to withstand financial hardship that can lead to negative behavioral and emotional outcomes among children.

Acknowledgements

We wish to thank Hampton University for support for the project through funds obtained from the Faculty Research Grant.

This research uses data from Add Health, a program project directed by Kathleen Mullan Harris and designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris at the University of North Carolina at Chapel Hill, and funded by grant P01-HD31921 from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, with cooperative funding from 23 other federal agencies and foundations. Special acknowledgment is due Ronald R. Rindfuss and Barbara Entwisle for assistance in the original design. Information on how to obtain the Add Health data files is available on the Add Health

website (<http://www.cpc.unc.edu/addhealth>). No direct support was received from grant P01-HD31921 for this analysis.

Disclosure

The authors acknowledge that there are no conflicts of interest.

Ethical Approval

Approval was obtained by the Hampton University Institutional Review Board. It was determined that there were no risks involved and that informed consent was not required for the analyses of secondary, aggregate data.

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