

Fatherhood and Delinquency: An Examination of Risk Factors and Offending Patterns Associated with Fatherhood Status among Serious Juvenile Offenders

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Abstract Despite a large body of literature across multiple disciplines on adolescent motherhood, adolescent fathers have been largely absent from empirical research. Previous findings suggest that young men who experience multiple risk factors across a range of life domains have a high likelihood of becoming fathers at an early age, which can negatively impact their developmental trajectories and age-normative transitions (e.g. from school to work). However, little is known about the risk factors for fatherhood among high-risk juvenile offenders; nor is it well understood how fatherhood is related to criminal behavior in this population. The current study investigated risk factors and offending patterns associated with adolescent fatherhood status in a sample of serious juvenile offenders ($N = 1170$). Consistent with previous studies, fatherhood status was associated with greater risk exposure among serious juvenile offenders. Furthermore, change in fatherhood status was associated with higher levels of overall offending, aggressive offending, income-related offending, and non-drug-related income offending. In light of these findings, we propose that supports and resources are needed to facilitate juvenile offenders in their role as fathers during this time.

Keywords Adolescent fathers · Teen parenthood · Life-course transitions · Juvenile offenders · Offending behavior

Introduction

The risk factors and negative outcomes associated with teenage parenthood have been well documented in the public health and social science literatures. Parenthood during adolescence has been associated with low educational attainment (Fergusson and Woodward 2000) and low income and earning potential over the lifespan for young parents (Assini-Meytin and Green 2015; Bissell 2000). Children born to adolescent parents also face poor physical, social, and behavioral outcomes, including low birth weight (Guimarães et al. 2013), risk of behavioral problems (Hofferth and Reid 2002), and risk of future adolescent parenthood themselves, known as the intergenerational cycle of adolescent parenting (Kaplan et al. 2008; Sipsma et al. 2010).

Despite a significant body of research on adolescent motherhood, a paucity of research exists exploring risk factors and outcomes for adolescent fathers. This may be due to negative stereotypes that researchers hold regarding the role that adolescent fathers play in their children's lives (Tuffin et al. 2010). For instance, it is commonly believed that adolescent fathers are disinterested in their children or are unwilling to parent. The heavy emphasis on teenage mothers in research on adolescent pregnancy ignores the different experiences and outcomes of teenage fathers (Thornberry et al. 1997). In particular, becoming a father in adolescence appears to increase the likelihood of involvement in crime and delinquency, suggesting that an association with criminality is a unique factor to consider with adolescent fathers.

Adolescent fatherhood has been found to occur following an accumulation of psychosocial risk factors across a range of life domains that also place these youth at risk of criminal offending. Accordingly, Small and Luster (1994)

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posit that an ecological systems model (Bronfenbrenner 1979) can explain the occurrence of adolescent parenthood. According to the model, risk factors at the macro-, meso-, and micro-levels combine to place people at risk for adverse outcomes. For example, in the context of adolescent fatherhood, micro-level risk factors that are based in the individual may include low intelligence or a history of sexual abuse; meso-level risk factors are those in the social sphere and may include limited access to health care providers and having sexually active friends (Small and Luster 1994). More broadly, macro-level factors may include race and economic stability.

A small body of research supports an ecological systems model as an explanatory theory for parenthood risk among male and female youth. Using a sample of 105 male and female adolescents and young adults recruited from state public health services-led pregnancy and parenting programming, Corcoran et al. (2000) tested various macro-, meso-, and micro-system risk factors for early parenthood. The authors found that socio-economic status (SES) and race were significant macro-level predictors; poor family communication and support were significant meso-level predictors; and older age, decreased alcohol use, and personal stress were significant micro-level predictors of teenage pregnancy and parenthood. Corcoran et al. suggested that young people from low SES backgrounds may lack access to educational and employment opportunities, and this may place them at risk for parenthood. According to Corcoran et al. (2000), if young people do not perceive opportunities for success in academic or vocational pursuits, then delaying parenthood does not offer significant benefits like completing a degree or securing stable employment. Furthermore, a lack of financial stability may correlate with a lack of access to contraception and family planning supports, increasing the risk of early pregnancy. Corcoran et al. (2000) suggested that poor family communication and support may predict pregnancy due to familial difficulties discussing pregnancy prevention. Finally, pregnancy or parenting risk increased as age increased. Corcoran et al. (2000) found that the odds of pregnancy or parenting increased 1.88 times for every year adolescents' age increased. Furthermore, those who experienced teenage pregnancy and/or parenthood were more likely to report increased personal stress. Whether their stress levels were due to early parenting or other life stressors was unclear from their findings. That older teenagers were more likely to be parents than younger ones suggests that risk factors continue to accumulate over the developmental period of adolescence. It also may be that an older age in adolescence presents more opportunities for exposure to risk. Interestingly, pregnant and parenting adolescents were significantly less likely to use alcohol, which may be due to attending fewer social

events with alcohol-using peers or an attempt to minimize negative influences on their children.

Small and Luster (1994) explored the ecological systems model for early parenthood in young men, specifically. The presence of multiple micro-, meso-, and macro-level risk factors, including substance use, the presence of a romantic partner, and low neighborhood monitoring, converged to increase the risk of adolescent sexual activity, thereby increasing the likelihood of adolescent parenthood. Compared to female youth, fewer risk factors needed to be present to increase the likelihood of sexual activity for male youth. This suggests that adolescent males may be engaging in higher-risk sexual encounters than adolescent females, placing them at greater risk of adverse sexual health outcomes, including early parenthood.

Research has also been conducted to identify risk factors of early parenthood among males in conflict with the law. Thornberry et al. (1997) found that having a single parent, being the child of a teenage parent, endorsement of anti-social beliefs, low socio-economic status, substance use, gang involvement, and low parental expectations were significantly correlated with becoming an adolescent father. Other research has found that aggression, arrest histories, and early behavior problems are risk factors for adolescent fatherhood (Fagot et al. 1998; Miller-Johnson et al. 2004). Kelly-Ricks (2010) suggested that the same socialization process that predisposes young males to be aggressive and violent may also predispose them to early fatherhood.

Using the ecological systems model, Unruh et al. (2004) explored macro-, meso-, and micro-level risk factors for adolescent fatherhood among a sample of incarcerated adolescents transitioning back into the community. Approximately one-quarter of the sample identified as fathers (28.3 %). Compared to non-fathers, fathers were more likely to report gang membership as a micro-level risk factor; being raised by a non-biological parent (e.g. foster parent) and having a parent with alcoholism or a felony record were meso-level risk factors; and low maternal education and low SES were macro-level risk factors. Unruh et al. (2004) also combined each domain of risk factors into a cumulative risk probability model and found that fatherhood risk was greatest when problematic or disruptive family structures were present (e.g. foster care, parent with a felony record) alongside problematic social risk factors, including disorganized neighborhoods. Unruh et al. (2004) suggested that family structures might be protective in the face of other macro- and micro-level risk factors. In their cumulative risk model, the probability of fatherhood was lowest (20 %) when an individual only experienced social risk factors, such as gang involvement or a low-SES neighborhood. Exposure only to family-related risk factors pushed the probability of fatherhood to 44 %. However, when social and familial risk factors were

combined, the probability of fatherhood was 76 %. This suggests that family-related risk factors may compound the influence of other risk factors, which might mean that adolescent fathers and those at highest risk for fatherhood present with multi-problem behavioral concerns.

Other studies support a multi-problem, ecological systems model for understanding teenage fatherhood. Stouthamer-Loeber and Wei (1998) found that, whereas risk factors for teenage fatherhood in a sample of juvenile offenders correlated positively with incidences of serious delinquency, not all risk factors for delinquency correlated with fatherhood. In particular, precocious sexual activity and exposure to drug use and dealing were particularly associated with both fatherhood and serious delinquency. Moreover, although offending increased in the year after participants become fathers, they were more likely than non-fathers to engage in property offending and equally likely to engage in violent offending. Consistent with Unruh et al. (2004), Stouthamer-Loeber and Wei (1998) found that teenage fathers experienced significantly poorer outcomes than non-fathers, including poor attachment to school and residing in bad neighborhoods. This suggests that, despite being multi-problem youth, teenage fathers who are also juvenile offenders experience a different subset of risk factors than do non-fathers, and that fatherhood may influence the types of offending in which they engage.

Khurana and Gavazzi (2011) similarly found that court-involved teenage fathers experienced risk factors that non-fathers did not. Meso-level risk factors, such as being involved in the child welfare system and having incarcerated family members, were significantly more likely to be reported by teenage fathers than non-fathers. Furthermore, teenage fathers were more likely to have experienced trauma and to have longer offense histories. Miller-Johnson et al. (2004) also found that early experiences of trauma predict teenage fatherhood. These findings suggest that risk factors for teenage fatherhood, as well as those for delinquency, may begin early in childhood.

Finally, once justice-involved youth become fathers, how do they fare as parents? In a qualitative study, Wilkinson et al. (2009) interviewed 115 juvenile offender fathers on their level of participation with their children and perceptions of their roles as fathers. Within this sample, fathers were characterized as either ‘involved’ or ‘uninvolved’ in their children’s lives. Fathers identified as uninvolved were more likely to be younger; to have been raised without their father; report a poor relationship with their child’s mother; not live with their child or have limited access to them; were less likely to have completed school; and more likely to report engaging in delinquency or preferring time with peers. This lack of “developmental assets” (p. 945, Wilkinson et al. 2009) placed teenage fathers even further at risk for negative or no relationships with their children.

Wilkinson et al. (2009) suggested that these risk factors may place additional pressure on uninvolved fathers, who may want to be an ideal father but lack the means to do so.

In general, research indicates that the experience of off-time events such as adolescent fatherhood can have negative implications for one’s future development and can significantly limit the success of future transitions. Juvenile offender fathers are even more at risk for poor developmental outcomes, given that they are involved in the justice system and also have become a parent early. Hogan and Astone (1986) posit that the appropriate timing for a role transition (e.g. from student to worker; single to married) is governed by societal norms and, when individuals experience a role transition off-time (too early or too late), such as adolescent fatherhood, their performance in said role may be compromised. For serious juvenile offenders, experiencing an off-time transition may be particularly problematic due to their more immature abilities to adapt to change.

In light of the limited research on adolescent fatherhood in juvenile offender populations, the first goal of the current study was to identify risk factors associated with adolescent fatherhood in a large sample of serious juvenile offenders, based on previously identified risk factors. This population has been identified as at particularly high risk for teen parenthood, compared to less serious offenders (e.g., Stouthamer-Loeber and Wei 1998) and has received little attention in the literature. We expected that fathers would report higher risk exposure than non-fathers, including exposure to violence; substance abuse treatment history; peer delinquency; minority race/ethnicity; low SES; gang involvement; early problem behaviors; and low school enrollment. The second goal was to determine whether the onset of fatherhood among serious juvenile offenders was associated with greater levels of offending behavior. Based on previous research, we hypothesized that youth who identified as becoming fathers at 12-month follow-up would report higher levels of offending behavior relative to youth who did not identify a change in fatherhood status at 12 months. However, as noted previously, studies of offending behavior in normative adolescent samples have found that the positive relationship between fatherhood and delinquency does not generalize to all forms of offending behavior (Landers and Mitchell 2015). Therefore, the third goal of the study was to examine whether change in fatherhood status was associated with higher levels of offending across three different types of offending behavior: aggressive offending; income offending; and non-drug-related income offending. Taking into account prior research, we predicted that the onset of fatherhood would be associated with significantly higher levels of income offending, but that there would be no change in either non-drug-related offending or aggressive offending.

Method

Participants

Data for the current study were obtained from the baseline and 12-month follow-up interviews of the Pathways to Desistance Study (Mulvey et al. 2004). Pathways to Desistance is a longitudinal multi-site study that followed a group of 1354 serious juvenile offenders (1170 males, 184 females) over a 7-year period. At baseline, participants were between the ages of 14–19 years and had been charged with committing a serious felony offense or serious non-felony offense in the juvenile or adult court systems of Maricopa County, Arizona or Philadelphia, Pennsylvania between November 2000 and January 2003. Serious offenses included most felony offenses as well as minor property offenses, misdemeanor sexual assault, and weapons offenses. Due to the high proportion of drug offenses committed by eligible participants, the study developers capped the enrollment of youth who had been charged with drug-related offenses at 15 % for male participants. For additional information regarding the data collection procedures, recruitment, or study design consult Mulvey et al. (2004), Schubert et al. (2004), or www.pathwaysstudy.pitt.edu.

Procedure

For the current study, the data collected from male offenders ($N = 1170$) during the baseline and 12-month follow-up interviews were used. Unfortunately, 84 male participants (13 fathers) did not have complete 12-month follow-up data and therefore some of our analyses are based on the 1086 male offenders. Analyses of the systematic differences between individuals with and without missing data at 12-month follow-up revealed that individuals with missing data were significantly older than those without missing data, but there were no significant differences in terms of SES, ethnicity, fatherhood status, or overall offending frequency between groups.

Males were divided into two groups, fathers and non-fathers. Youth who reported having one or more children or who reported having a pregnant girlfriend were coded as fathers. Out of the total sample, 173 (15 %) were identified as fathers at baseline, and the remainder ($n = 997$) were classified as non-fathers. This rate of parenthood is comparable to that of the Pittsburgh Youth Study (Hipwell et al. 2015), but is lower than would be expected in a sample of juvenile offenders (Stouthamer-Loeber and Wei 1998). Descriptive information based on fatherhood status at baseline is presented in Table 1. Among fathers whose children were born at the time of baseline, the majority reported having one child (91.8 %) and 41.2 % reported being in contact with their child on a daily basis. Compared

Table 1 Demographic information at baseline by fatherhood status

Variable	Teenage father ($n = 173$) M (SD) or %	Non-fathers ($n = 997$) M (SD) or %	χ^2 or t
Age	16.62 (.91)	15.95 (1.17)	7.11***
SES			1.27
Lower	79.1 %	75.2 %	
Middle	18 %	21.8 %	
Upper	2.9 %	3 %	
Ethnicity			24.56***
Black	52 %	40.4 %	
Hispanic	37.6 %	33.4 %	
White	5.8 %	21.6 %	
Other	4.6 %	4.6 %	

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

to non-fathers, fathers were more likely to be older, non-white, and of lower socioeconomic status. At 12-month follow-up, 81 offenders who were previously classified as non-fathers at the time of baseline reported being a father (i.e., reported a pregnant girlfriend or a child). Additionally, 31 offenders who were previously classified as fathers at baseline (i.e., reported a pregnant girlfriend or a child) reported no children at 12-month follow-up. It is possible that this alteration in fatherhood status is due to a loss of custody or pregnancy termination. However, these are speculation, as it is not possible to identify why fatherhood status at baseline changed to non-fatherhood status at 12-month follow-up. In the current study, self-reported fatherhood status at time 1 was not modified based on discrepant information at time 2 (i.e., self-reported fathers at time 1 remained fathers at time 1 regardless of time 2 status).

Measures

Demographics

Information regarding age and ethnicity was collected using self-report. Socioeconomic status (SES) was calculated using Hollingshead's two-factor Index of Social Position (ISP), which provides an overall ISP based on parent education level and occupational status (Hollingshead 1957). Participants were asked to provide details about their parent(s)' occupation and education level that were ranked according to Hollingshead's ISP classification. Rankings ranged from 1 (higher executives, professional degrees) to 7 (unskilled laborers, less than high school; Hollingshead 1957). Based on this information, a composite ISP score was calculated for each parent using Hollingshead's social

position formula, $((\text{Occupation score} \times 7) + (\text{Education score} \times 4))$, and averaged (between two parents when necessary; Hollingshead 1971). The final ISP composite score was classified into three SES categories based on the value range of the social index: 11–27 (upper), 28–43 (middle), and 44–77 (lower). Youth's self-reported ethnicity was coded as 1 = Black, 2 = Hispanic, 3 = Other, and White was used as the primary reference category.

Parent Education Level

Information regarding parent education was obtained through participant self-report. Participants were asked to report on their parent(s) highest level of education and levels were then ranked from 1 (professional degree) to 7 (less than high school) and averaged between parents when necessary to create an overall parent education score.

Self-Reported Offending and Offending History

To evaluate involvement in offending behavior, participants were asked to report on their level of involvement in a series of 22 antisocial behaviors and illegal activities. The items were adapted from the Self-Report of Offending (SRO; Huizinga et al. 1991) and ranged from minor acts (e.g., minor theft) to more serious offenses (e.g., gang violence and murder). The SRO has been found to be highly correlated with official records of offending, but is thought to provide a more accurate estimate of the frequency of offending behavior, as crimes often go unreported in official records (Brame et al. 2004). Based on participant reports, a series of frequency scores was generated to reflect the participant's antisocial involvement. The aggressive offending frequency score reflected participant's level of engagement in offenses that involve a personal interaction with a victim (e.g., "Taken something from another person by force, using a weapon?"). The income-related offending frequency score reflected participant's level of engagement in crimes involving financial gain (e.g., "Used checks or credit cards illegally?"). In contrast, the non-drug-related income offending frequency score also reflected financially motivated crimes, but excluded drug-related offenses. Finally, a total offending frequency score was calculated from the total number of offenses each participant reported during the previous 12 months. In the current study, the distribution of total frequency scores was positively skewed; therefore, a log transformation of each score was conducted as a correction. The SRO scale has been used extensively in the literature pertaining to adolescent delinquency and has been found to have good internal reliability of .85 (Wright et al. 2001).

Count of Early Problem Behaviors

Information regarding participant's level of involvement in problem behaviors during childhood was gathered using five items taken from the Early Problem Behavior domain of the Psychopathy Checklist-Youth Version measure (PCL-YV; Forth et al. 2003). Participants were asked to report yes (1) or no (0) as to whether they had gotten in trouble for: cheating; disturbing class; stealing; fighting; or getting drunk and/or stoned prior to age 11. A count of early problem behaviors was created from the sum of individual participant responses. The PCL-YV has been found to obtain a high reliability in juvenile offender populations (Forth and Mailloux 2000); however, the Pathways to Desistance research team did not make the psychometrics of the Early Problem Behaviors subscale publically available.

Drug and Alcohol Treatment History

Participants were asked to report yes (1) or no (0) whether they had received drug or alcohol treatment within the past 6 months or prior to this time period.

School Enrollment

Participants were asked to report whether they were attending school in the community prior to their arrest or if they had permanently dropped out. Based on participant responses school enrollment was coded as yes (1) or no (0).

Family Arrest History

Participants were asked to report yes (1) or no (0) as to whether anyone in their immediate or extended family had ever been arrested.

Exposure to Violence

Exposure to violence was assessed using an adapted version of the Exposure to Violence Inventory (Selner-O'Hagan et al. 1998). This scale assessed the extent to which individuals have experienced and/or observed violence through their endorsement of experience with 13 violent incidents. Six items evaluate participant's experiences with violence as a victim (e.g., "Have you ever been chased where you thought you might be seriously hurt?"); the remaining seven items assess participant's experiences with violence as a witness (e.g., "Have you ever seen someone else being raped, an attempt made to rape someone or any other type of sexual attack?"). As well, four items that evaluated participant's exposure to death (e.g., "Has anyone close to you tried to kill him/herself?", "Has anyone close to you died?", "Have you ever found a dead body?", "Have you ever tried

to kill yourself?”). Based on the number of events a participant endorsed, a total victim score and a total witness score were generated. In the current study, the total exposure to violence score was used. It was calculated through the summation of the witness and victim scores. This scale has previously been found to have a high test-retest reliability ($r = .88$) and high internal consistency of .93 (Selner-O'Hagan et al. 1998).

Peer Delinquency and Gang Involvement

The peer delinquency measure was adapted from items on the Rochester Youth Survey (Thornberry et al. 1994). Participants were asked to report the number of friends who either had engaged in or had encouraged their involvement in antisocial activities over the previous six months. The scale contained 19 antisocial behavior items rated on a 5-point scale, ranging from “none of them” to “all of them.” A score for Antisocial Peer Influence was calculated from the mean rating of the seven items pertaining to encouragement of antisocial behavior by peers (e.g., “During the last six months how many of your friends have suggested that you should sell drugs?”). A score for Antisocial Peer Behavior was computed from participants' mean rating on the 12 items pertaining to antisocial behaviors displayed by peers (e.g., “During the last six months how many of your friends have sold drugs?”). This measure has previously been found to have high internal reliability, ranging from $\alpha = .90$ –.99 (Chung and Steinberg 2006). Additionally, gang involvement was assessed by asking participants whether they had been involved in a gang prior to their arrest and this was coded as yes (1) or no (0).

Data Analyses

The analyses proceeded in three steps. First, correlation coefficients and descriptive statistics were computed for all the variables in the analyses. Second, a multiple logistic regression analysis was conducted to identify variables associated with fatherhood status, following the model-building procedure by Hosmer and Lemeshow (2013). This model-building process helps to ensure the most parsimonious model by removing unstable independent variables that may not generalize to future models (Hosmer and Lemeshow 2013). The first step required an examination of categorical variables involving multiple categories within a contingency table, to remove or collapse categories with frequency levels of zero. Ethnicity was the only multiple categorical risk factor in the current study, and it was found to have adequate frequency distributions across all categories. Next, individual risk factors were each examined individually within a univariate logistic regression model to determine if they were significantly associated with the

dependent variable (fatherhood) at a p -level of .25. Hosmer and Lemeshow (2013) advise using a higher p -value during the variable selection process (e.g., .20 or .25), as more stringent significance levels are likely to exclude important variables. Following these univariate analyses, adolescent fatherhood status was regressed onto all statistically significant risk factors. After running the reduced regression model, risk factors that had become non-significant were removed and previously removed risk factors (due to non-significance during initial model fitting) were tested in the final regression model with the reduced set of risk factors one at a time to test for potential changes in significance levels. To address the second research question examining change in fatherhood status as a risk factor associated with offending behavior, four hierarchical regression analyses were performed, one for overall offending frequency and one for each specific offense type behavior (i.e., income offending, aggressive offending, non-drug-related income offending). In each regression model demographic factors known to be associated with offending behavior (i.e., age, ethnicity, and SES) and frequency of offending behavior at baseline were controlled for in step one, and change in fatherhood status was entered in step two.

About 5 % of the sample had missing data. These missing values pertained to peer antisocial behavior (3.1 % missing); peer antisocial influence (1.2 % missing); and parent education level (1.8 %). Little's (1988) multivariate test of for missing completely at random (MCAR) was performed to determine whether the missing data were suitable for imputation. The results of this analysis were significant ($\chi^2(60) = 92.88$, $p = .001$), indicating that the missing values were not MCAR. To determine whether the missing data were missing in a systematic way (i.e., missing at random [MAR]), a series of separate variance t tests were performed between participants with and without item sets with missing values. The missing values were found to differ significantly based on participant age, exposure to violence, and frequency of offending over the previous 12 months and thus suitable for multiple imputation (MI; Graham 2009). Therefore, the data were imputed using MI, and all results are reported based on pooled data.

Results

Descriptive statistics of study variables at baseline, based on fatherhood status, are presented in Table 2. Overall, the mean values and rates of exposure to risk variables were higher for adolescent fathers. In terms of offending behavior, adolescent fathers generally reported higher mean levels of involvement in offending, except for non-drug-related income offending. Bivariate correlations, separated by fatherhood status, are presented in Table 3. All types of

Table 2 Descriptive statistics for study variables ($N = 1170$)

Variable	Fathers M (SD) or %	Non-fathers M (SD) or %	χ^2 or t
Peer antisocial behavior	2.61 (.84)	2.32 (.93)	3.84***
Peer antisocial influence	1.90 (.86)	1.77 (.87)	1.81
Involved in a gang	32 %	23.3 %	6.58**
Early problem behaviors	1.67 (1.18)	1.59 (1.19)	.80
Enrolled in school	66 %	74 %	4.66*
Received drug or alcohol treatment	23 %	19.9 %	.91
Family member was arrested	78 %	79 %	.03
Exposure to violence	6.63 (2.79)	5.30 (2.98)	5.46***
Overall offending	1.68 (.98)	1.28 (.89)	5.41***
Aggressive offending	.83 (.58)	.72 (.57)	2.14*
Income offending	1.30 (1.06)	.95 (.92)	4.44***
Non-drug-related income offending	.62 (.66)	.63 (.66)	-.16

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

offending behaviors were significantly positively correlated with one another for both fathers and non-fathers. An examination of the association between risk factors and offending behavior revealed that the strength of associations differed based on fatherhood status. Specifically, for fathers, exposure to violence was the most strongly correlated risk factor with each offense type behavior, whereas antisocial peer behavior was the most strongly correlated risk factor with offending for non-fathers.

Table 4 displays the results of the multiple logistic regression analysis. In the first step of the model building process, each of the 11 risk factors was individually tested in a univariate logistic regression model for a statistically significant association with the dependent variable. Eight risk factors were selected for inclusion in the model, age ($OR = 1.74$, $p < .001$), enrolled in school ($OR = .69$, $p < .05$), ethnicity ($OR = 1.36$, $p < .01$), total exposure to violence ($OR = 1.17$, $p < .001$), gang involvement ($OR = 1.54$, $p < .05$), antisocial peer influence ($OR = 1.17$, $p = .08$), antisocial peer behavior ($OR = 1.40$, $p < .001$), and parent education level ($OR = 1.25$, $p < .05$). Upon entry in the multivariate model, school enrollment, gang involvement, antisocial peer influence, and antisocial peer behavior were no longer significant and were removed from the model. The final model represents a statistically significant improvement over the null model (-2 Log Likelihood = 882.04, $\chi^2(6) = 98.38$, $p < .001$). After running the regression analysis with the reduced variable set, the previously eliminated independent variables were tested one at a time for significance in the model. None of the previously eliminated variables emerged as significant. In the final regression model, age, ethnicity, parental educational level, and total exposure to violence were significantly associated with adolescent fatherhood status.

To evaluate change in fatherhood status as a risk factor associated with increased offending behavior at 12-month

follow-up, a hierarchical regression analysis was performed for each offense type behavior (i.e., overall offending, income offending, aggressive offending, and non-drug-related income offending). For each regression model, the relevant offending behavior was the dependent variable. The results of these analyses are presented in Table 5. In the first model, after controlling for age, ethnicity, SES, and frequency of overall offending at baseline, change in fatherhood status was found to be significantly associated with overall offending, $F(1, 1080) = 17.96$, $p < .001$, accounting for 2 % additional variance in overall offending, $\Delta R^2 = .02$, $p < .001$. In the second regression model, change in fatherhood status also was found to be significantly associated with income offending, $F(1, 1080) = 18.60$, $p < .001$, and accounted for 2 % of the variance, $\Delta R^2 = .02$, $p < .001$. In the third regression model, change in fatherhood status emerged as significantly related to aggressive offending, $F(1, 1080) = 10.10$, $p < .01$, and accounted for 1 % of the variance, $\Delta R^2 = .01$, $p < .01$. Finally, in the fourth regression model, fatherhood status also emerged as a significant predictor of non-drug-related income offending, $F(1, 1080) = 6.98$, $p < .05$, and after controlling for covariates, accounted for 1 % additional variance in offending, $\Delta R^2 = .01$, $p < .05$.

Discussion

Although the negative outcomes associated with adolescent motherhood have been widely investigated in the literature, fewer studies have examined the impacts of adolescent fatherhood. The current study sought to address this gap in the literature by investigating risk factors and offending behaviors associated with adolescent fatherhood status in a sample of serious juvenile offenders. The results suggest that, not only do serious juvenile offender fathers

Table 3 Bivariate correlations of study variables by fatherhood status ($N = 1170$)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Age	–	–	–	–	–	–	.12	.02	.02	.19*	–	.08	–	.10	–
2. Ethnicity	.02	–	.16*	.04	.00	.23**	–	–	.12	–	.13	–	–	–	.05
3. SES	–	.18***	–	–	–	–	–	.03	.06	–	–	–	–	–	–
4. Peer antisocial behavior	.10**	.15***	.06	–	.64***	.26**	.58***	–	.20**	.14	.23**	.41***	.51***	.32***	.43***
5. Peer antisocial influence	.13***	.10**	.03	.71***	–	.23**	.41***	.05	.04	.18*	.11	.21*	.28***	.16*	.31***
6. Gang involvement	–	.21***	.11**	.34***	.30***	–	.17*	–	.07	.16*	.21**	.12	.24**	.09	.32***
7. Exposure to violence	.18***	.08*	.01	.58***	.44***	.30***	–	.03	.09	.23**	.15	.41***	.43***	.35***	.29***
8. School enrollment	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
9. Family arrests	.01	.06	.04	.18***	.15***	.16***	.21***	–	–	.03	.17*	.11	.25**	.14	.15*
10. Treatment history	.06*	–	.00	.25***	.24***	.15***	.21***	–	.06	–	.12	.06	.09	.08	.23**
11. Early problem behaviors	–	.01	–	.30***	.27***	.24***	.30***	–	.14***	.21***	–	.02	.12	.02	.13
12. Total offending	.09**	.01	–	.55***	.43***	.23***	.47***	–	.16***	.20***	.25***	–	.54***	.89***	.47***
13. Aggressive offending	–	.06	.02	.51***	.41***	.31***	.44***	–	.16***	.15***	.28***	.70***	–	.43***	.66***
14. Income offending	.08*	–	–	.50***	.39***	.18***	.41***	–	.14***	.19***	.21***	.92***	.55***	–	.52***
15. Non-drug-related income offending	.01	.01	–	.47***	.42***	.23***	.31***	–	.13***	.20***	.22***	.69***	.63***	.74***	–

Note Correlations for fathers are located above the divider and for non-fathers are below the divider

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

experience risk factors that non-fathers do not, they also report significantly different offending patterns. Both these findings are discussed below.

Table 4 Multiple logistic regression analysis examining factors associated with adolescent fatherhood status

Risk factor	<i>B</i> (SE)	OR (95 % CI)
Age	.49 (.09)***	1.63 (1.38, 1.93)
Ethnicity ^a		
Ethnicity 1	1.33 (.35)***	3.78 (1.90, 7.49)
Ethnicity 2	1.12 (.37)**	3.07 (1.49, 6.33)
Ethnicity 3	1.09 (.51)*	2.98 (1.10, 8.07)
Exposure to violence	.12 (.03)***	1.13 (1.07, 1.20)
Parental education level	.25 (.11)*	1.28 (1.04, 1.57)
Constant	−11.75 (1.50)***	

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

^a 1 = Black, 2 = Hispanic, 3 = Other

Risk Factors Associated with Adolescent Fatherhood Status

Based on previous research using a social ecological framework model, we hypothesized that adolescent fathers would report greater exposure to risk factors than non-fathers. The results of the current study provided support for this hypothesis. In terms of macro-, meso-, and micro-level risk factors, youth who were older, non-white, and whose parents had lower levels of educational attainment were more likely to report fatherhood status. These demographic factors are in line with previous research findings and provide further support for the conceptualization of adolescent fatherhood as an outcome of higher exposure to risk (Khurana and Gavazzi 2011; Unruh et al. 2004; Wilkinson et al. 2009). As well, also consistent with past research (Khurana and Gavazzi 2011), past exposure to violence was found to be significantly associated with fatherhood status. Indeed, Adna et al. (2001) found that exposure to physical or sexual abuse in childhood nearly doubled males' risk of impregnating a partner.

Table 5 Hierarchical linear regression analysis on the relation between change in fatherhood status and offending ($N = 1086$)

Variable	<i>B</i>	SE	<i>t</i>	95 % CI
Overall offending frequency				
SES	.03	.04	.87	−.05, .13
Ethnicity	−.02	.03	−.53	−.07, .04
Age	−.06	.02	−2.11*	−.06, −.02
Overall offending frequency at baseline	.28	.02	9.61***	.19, .28
Fatherhood change	.12	.08	4.24***	.27, .44
Income offending frequency				
SES	.05	.04	1.54	−.02, .15
Ethnicity	−.03	.03	−1.07	−.08, .02
Age	−.06	.02	−1.89	−.05, −.02
Income offending frequency at baseline	.24	.02	8.05***	.13, .22
Fatherhood change	.13	.08	4.31***	.26, .41
Aggressive offending frequency				
SES	−.01	.03	−.27	−.06, .04
Ethnicity	.01	.02	.37	−.03, .04
Age	−.07	.01	−2.52*	−.05, −.01
Aggressive offending frequency at baseline	.32	.02	11.33***	.20, .29
Fatherhood change	.09	.05	3.18**	.06, .24
Non-drug related income offending frequency				
SES	.03	.02	1.16	−.02, .07
Ethnicity	−.02	.02	−.61	−.04, .02
Age	−.07	.01	−2.43*	−.04, −.01
Non-drug related income offending frequency at baseline	.30	.02	10.33***	.15, .22
Fatherhood change	.08	.05	2.64**	.05, .18

B = standardized beta

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

Overall, fatherhood status was associated with greater risk exposure at all levels of the ecological systems model; however, the disparity in risk exposure between adolescent fathers and non-fathers was lower than that observed in previous investigations of fatherhood in adolescent samples (Unruh et al. 2004; Khurana and Gavazzi 2011). Many risk factors that had been previously identified as predictive of adolescent fatherhood were found to be non-significant among the adolescents in the current sample. For instance, gang involvement, which has previously been identified as one of the strongest meso-level predictors of adolescent fatherhood among at-risk and court-involved youth (Unruh et al. 2004; Khurana and Gavazzi 2011), did not emerge as a significant risk factor. Likewise, family arrest history, which has also been linked to adolescent parenthood among at-risk youth (Unruh et al. 2004), was not found to be associated with fatherhood status in the current study. The reduced risk-related disparity between fathers and non-fathers in the present study might be the result of the higher-risk nature of the sample which had a greater level of cumulative risk exposure, regardless of fatherhood status. Thus, it is possible that family arrest history and gang involvement was similarly experienced by many of the youth included in the current study and so did not distinguish fathers from non-fathers.

Due to the consistent relationship between trauma exposure and fatherhood status across different adolescent samples, exposure to trauma may be a key factor influencing the occurrence of adolescent fatherhood. Experiencing trauma may further compound the risks these youth already face, placing them at high-risk for early parenthood. Past research suggests that exposure to violence is associated with increases in risky sexual behavior (Fantasia et al. 2012). Therefore, it is possible that the increased rate of adolescent fatherhood among those exposed to violence is a reflection of this increased sexual risk-taking; however, the potential factors mediating this relationship are unknown. For instance, due to the association between trauma/exposure to violence and increased substance use, it is possible that adolescents with a history of violence exposure engage in higher levels of substance use to cope with their trauma. Therefore, as a result, they are more likely to engage in risk-taking behavior (Joseph et al. 2006). Another possible explanation is that exposure to violence early in development may contribute to developing post-traumatic stress symptomatology, which has been associated with increased sexual risk-taking in a sample of young Latino males (Rivera et al. 2015). Future research is needed to identify potential mediators of the relationship between trauma/violence exposure and adolescent fatherhood.

Fatherhood Status and Non-Violent Offending Behavior

After examining risk factors associated with fatherhood status, we examined the association between change in fatherhood status and offending behavior. In support of our hypotheses and consistent with previous research (e.g., Landers and Mitchell 2015; Na 2016), change in fatherhood status was found to be related to a greater frequency of overall offending. These results accord with previous studies of reintegration among juvenile offenders. For example, Unruh et al. (2003) found that, within 12 months of release, adolescent fathers were significantly more likely to reoffend and return to juvenile detention facilities than non-fathers. Overall, these findings are supportive of the multi-problem behavior theory (Jessor and Jessor 1977), which states that problem behaviors such as risky sexual behavior and juvenile delinquency are associated with similar risk factors and tend to co-occur together. Therefore, prevention programs that target risk factors for adolescent parenthood are likely to also have positive impacts on other problem outcomes such as offending behavior.

Previous findings using the Pathways to Desistance sample found that youth with more exposure to violence and trauma were more likely to engage in violent crime (Baskin and Sommers 2014). Exposure to violence may also increase the likelihood of substance abuse and maladaptive coping strategies, such as interpersonal violence (Nofziger and Kurtz 2005). Our sample of fathers was more likely to report a history of exposure to violence. This might place them at risk not only for sexual risk-taking resulting in fatherhood, but also for aggressive offending. Thus, exposure to violence may be a key underlying mechanism or risk factor for both aggression and early fatherhood.

In addition to the relation with overall offending, subsequent hierarchical regression analyses revealed that change in fatherhood status was associated with significantly higher levels of income-related offending, non-drug-related-income offending, and aggressive offending. These findings correspond with research by Landers and Mitchell (2015), who found that in comparison to non-fathers, at-risk adolescent fathers reported higher levels of involvement in property crime, assault, and drug-related crimes. Qualitative researchers have speculated that the higher levels of income-based offending reported by adolescent fathers might be motivated by financial need (Tuffin et al. 2010). Specifically, when faced with a strong desire to financially provide for their children (Paschal et al. 2011; Tuffin et al. 2010; Redmond 1985), adolescent fathers may turn to income-based offending in response to perceived limited opportunities for legal employment or a need for immediate income.

This turn to income-based offending is supported by Wilkinson et al. (2009) whose participants reported in

interviews that drug dealing was an attractive line of work due to the financial and material gains it provided. In line with these hypotheses, having an income and the ability to provide for their children has been found to be particularly important to adolescent fathers. A positive relationship has been found between income and willingness to parent in adolescent fathers, suggesting that being able to provide is perceived as a prerequisite to parenting (Redmond 1985). Wilkinson et al. (2009) found similar outcomes in uninvolved fathers, who were less able to secure employment and provide financially for their children. Tuffin et al. (2010) found that the adolescent fathers in their study were willing to sacrifice personal time, recreation, and previous activities in order to prioritize employment and earning money to support their children, even at the expense of spending quality time with them, believing that this is what constitutes “being a father.”

Similarly, in another qualitative study, Paschal et al. (2011) found that adolescent fathers reported feeling as though they did not have much to offer unless they could provide financially, and perceived their children’s mothers as being ultimately responsible for their child’s wellbeing. It is therefore possible that juvenile offenders may increase income-related offending after becoming a father, in search of the means to provide for their children, if they are unable to access secure and stable employment. Consistent with Hogan and Astone (1986), the fact that these youth may begin offending in an attempt to earn an income suggests they are still developmentally immature and unable to adaptively respond to the stresses of an off-time transition. From an ecological systems standpoint, adolescent fathers may be experiencing significant macro-level, structural barriers to successfully providing for their children in material ways. However, they also appear to be struggling to with dominant cultural stereotypes that fathers are less interested in and less capable with their children than are mothers (Thornberry et al. 1997). Thus, they may feel relegated to the provider role, increasing their risk of criminal justice contact.

Limitations

The current study has several limitations that warrant further discussion. First, self-report data were used to determine fatherhood status and to measure offending outcomes. Due to the nature of the study sample, the use of a self-report measure of offending behavior rather than official records may have resulted in an underestimation of the frequency of offending in the sample. In particular, participating offenders who have had negative experiences in the system may be hesitant to make reports regarding more severe offenses. Furthermore, as some adolescent fathers may have been unaware of their paternity status (Khurana and Gavazzi

2011), this reliance on self-report data potentially underestimates the true prevalence of adolescent fatherhood in the sample.

Second, in comparison to previous investigations of fatherhood among juvenile offenders, the sample size of the current study was relatively small. Additionally, this sample was reduced further when examining the effects of change in fatherhood status as a result of participant attrition at 12-month follow-up. This limited sample size reduced our capacity to examine the effects of change in fatherhood status on offending behavior. Relatedly, hierarchical regression analyses revealed that fatherhood accounted for a low percentage of the variance in offending behavior. It is possible that fatherhood may change motivation for offending for some youth, but that other demographic or social risk factors account for more variance in offending outcomes.

Finally, the current study is limited by the low proportion of fathers in the overall sample relative to previous offender samples (Unruh et al. 2004). It is possible that the lower prevalence in the current study may be due to the limits put on enrollment of drug offenders. Specifically, past research (Landers and Mitchell 2015) indicates that adolescent fatherhood is associated with an increased rate of drug-related offenses in offender populations. Thus, the constraints put on enrollment of drug offenders in the current study may have contributed to the low rate of adolescent fatherhood.

Implications

The current study has several practical implications for agencies serving serious juvenile offenders. In relation to pregnancy prevention among juvenile offenders, the findings suggest that early trauma and violence exposure are the most robust factors associated with adolescent fatherhood among justice involved youth. Therefore, exposure to trauma or child maltreatment could be assessed by professionals working with high-risk youth as an indicator of the need for prevention services related to adolescent parenthood specifically and sexual risk behavior more broadly. Evidence also suggests that exposure to trauma in early years may result in more hostile and insensitive parenting strategies (e.g., slapping/hitting their children) when maltreated youth become parents (Bert et al. and Centers for Prevention of Child Neglect 2009; Ehrensaft et al. 2015). Therefore, there are poor outcomes associated with early exposure to trauma not only for the adolescent father, but for their children, as well; hence, these youth may benefit from parenting interventions to promote positive outcomes for their children.

In terms of interventions for juvenile offenders, our findings provide quantitative support to previous qualitative

findings (Paschal et al. 2011; Tuffin et al. 2010; Wilkinson et al. 2009) that adolescent fathers have a strong desire to provide financially for their children. The higher levels of income-based offending reported by adolescent fathers suggests that youth in this position may have limited access to legal means of employment and income. Whether this limited access is perceived or actual, it places these youth in a unique position of wanting to provide support but perceiving few legal options to do so. A potential remedy is to provide concrete employment and educational supports to high-risk adolescent fathers involved in juvenile justice, perhaps through vocational or apprenticeship-style training programs. Emphasizing long-term financial well-being through vocational and/or apprentice training programs provides simultaneously for their immediate financial needs while also training them for more stable, and legal, careers, which has been found to positively impact their children over the long-term (Fletcher and Wolfe 2009; Futris et al. 2010).

Previous researchers have found that involvement with community agencies and employment in the community were significant predictors of successful reintegration for adolescent fathers leaving juvenile detention facilities (Unruh et al. 2003). Therefore, agencies serving criminally involved adolescent fathers should seek to enhance the availability of community resources for youth following their return to the community to help ensure more successful outcomes. Additionally, high-risk adolescent fathers who wish to be involved in their child's life may benefit from relationship counseling and support with their child's mother. For instance, an intervention targeting the co-parenting relationship between adolescent mothers and fathers found empirical support for its utility at fostering a positive parenting experience for the fathers (Lewin et al. 2015). This might suggest that living with their children, and/or having a supportive co-parenting relationship with their child's mother, may assist high-risk fathers in recognizing their important role in the healthy development of their children, taking the perceived pressure off of them to provide financially.

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no competing interests.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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