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Mental Health Service Needs in the Prison Boom: The Case of Children of Incarcerated Mothers

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Abstract

This study identifies the factors related to mental health service use among children of incarcerated mothers. Data on 700 children collected from a diverse sample of mothers in Arizona are used, and a two-stage probit model with sample selection is estimated to assess the various child, mother, and caregiver characteristics associated with children's use of mental health services. Results indicate that children involved in child protective services (CPS) and children cared for by grandparents are more likely to receive mental health services, whereas children of Native American mothers and children who have been exposed to violence are less likely to receive services for their mental health needs. These findings have important implications for correctional policy regarding the intake screening of female inmates and suggest that criminal justice agencies communicate more closely with CPS and community-based services to ensure children's mental health needs are addressed while their mothers are in prison.

Keywords

parental incarceration, children of incarcerated mothers, mental health services, unmet needs, unintended consequences.

After several decades of rapid growth in women's imprisonment, maternal incarceration has become ever more common among U.S. children (Carson & Golinelli, 2013; Smyth, 2012). Maternal imprisonment can be a traumatic event, and children of

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incarcerated mothers often experience acute stresses related to poverty, instability, and violence during their lives (Phillips, Erklani, Keeler, Costello, & Angold, 2006; Shlafer, Poehlmann, & Donelan-McCall, 2012; Wildeman & Western, 2010). Nevertheless, one of the most critical concerns faced by these children involves their development of mental health problems (Murray & Farrington, 2008b; Poehlmann et al., 2008). Indeed, several studies have shown anxiety, depression, and other internalizing problems to be common among children of incarcerated mothers (Geller, Garfinkel, Cooper, & Mincy, 2009; Kampfner, 1995; Phillips, Burns, Wagner, Kramer, & Robbins, 2002). And while the evidence is conflicting as to whether these problems stem directly from maternal imprisonment or from other preexisting life difficulties (e.g., early childhood trauma or prenatal exposure to drugs and alcohol; Johnston, 2006; Murray, Farrington, & Sekol, 2012; Wildeman & Turney, 2014), there is consensus that children of incarcerated mothers face a great deal of mental health concerns (Dallaire, 2007; Dallaire & Wilson, 2010; Tasca, Turanovic, White, & Rodriguez, 2014). This is problematic considering that in U.S. state prisons alone, there are approximately 65,600 incarcerated mothers who are parents of more than 147,400 minor children (Glaze & Maruschak, 2008).

Despite the increased scholarly focus on the mental health problems faced by these children, little is known regarding children's use of mental health *services* during maternal incarceration. Mental health services, which typically involve psychological treatment and professional interventions, can be an important source of support to help children cope with the psychological and emotional strains that often accompany a mother's imprisonment (Hagen, Myers, & Mackintosh, 2005; Tolan & Dodge, 2005). Children unable to receive treatment for their needs may face increased behavioral and social hardships, both in the short and long term. It remains unclear, however, as to *why* particular children are able to receive mental health services over others. Better understanding these gaps in mental health treatment is a critical step toward improving the welfare of children affected by maternal incarceration.

To address these issues and determine the factors associated with children's receipt of mental health services, we rely on data on 700 children generated from structured interviews with a diverse sample of mothers incarcerated in the state of Arizona. Regression models are estimated to determine the various characteristics of children, mothers, and caregivers that are associated with children's receipt of mental health services during maternal incarceration. The data we use are unique in that they provide mothers' accounts of the well-being of their children relative to the current prison term. In carrying out these assessments, our broader purpose is to shed light on the mental health status of children of incarcerated mothers.

The Mental Health of Children of Incarcerated Mothers

Children of incarcerated mothers are deemed to be "among the riskiest of the high risk children in our nation" (Myers, Smarsh, Amlund-Hagen, & Kennon, 1999, p. 11) in light of the substantial adversities they encounter in their lives. Such difficulties are often intimately tied to their mothers' own experiences, because incarcerated and

criminally involved women are known to suffer various hardships including child abuse, sexual victimization, interpersonal violence, and drug addiction (Arditti & Few, 2006; Daly, 1994; McCartan & Gunnison, 2010; Owen & Bloom, 1995). Such experiences often carry many negative, long-term consequences that increase the likelihood that children will experience maltreatment and develop mental health needs (Broidy et al., 2003; Magura & Laudet, 1996; Tasca et al., 2014). In particular, prior research has found that children of criminally involved mothers are more likely to be exposed to violence and to grow up around substance abuse, to experience intergenerational incarceration, to witness the arrest of a parent, and to live in poverty (Hagan & Dinovitzer, 1999; Johnson & Waldfogel, 2004; Rodriguez, Smith, & Zatz, 2009). Consequently, several studies have linked maternal incarceration to increases in childhood disadvantage, most notably through child welfare and foster care caseloads (Kruttschnitt, 2010; Swann & Sylvester, 2006).

Further compounding children's risks for psychological and emotional problems, the incarceration of a mother itself can be a distressing event (Arditti, 2012; Dallaire, 2007; Hissel, Bijleveld, & Kruttschnitt, 2011). Most incarcerated mothers reside with their children prior to confinement and are likely to be their primary caregivers up until the point of arrest or imprisonment (Chesney-Lind, 2002; Glaze & Maruschak, 2008). Unlike the children of incarcerated fathers who typically remain with their mothers, few children with mothers in prison remain with a biological parent (Belknap, 2015; Turanovic, Rodriguez, & Pratt, 2012). Instead, most children of incarcerated mothers move to live with a grandparent or another relative, or are placed in foster care. Generally, the homes of these relatives, and even foster homes, are not ideal living situations (Kruttschnitt, 2010). Relatives often reside in marginal neighborhoods, lack steady employment, and have substance abuse problems of their own, thereby adding to the risks these children already face (Giordano, 2010).

Accordingly, children of incarcerated mothers may experience several changes in care arrangements, home and school displacements, and breaks in mother–child communication (Mignon & Ransford, 2012; Poehlmann, 2005; Tasca, Rodriguez, & Zatz, 2011). Children can respond to these changes with anxiety, sadness, and fear, and may agonize over the well-being and safety of their mother in prison (Branch & Brinson, 2007; Gilham, 2012; Johnston, 1995). Even children who maintain contact with their mothers through visitation may experience a great deal of strain (Poehlmann, Dallaire, Loper, & Shear, 2010). Family interactions can be tense during visitation, and the prison environment can induce fear in many children (Arditti, 2003, 2012; Tasca, 2014). Taken together, children of incarcerated mothers tend to face significant risks of developing mental health needs that require treatment services (Greene, Haney, & Hurtado, 2000; Shlafer & Poehlmann, 2010).[1]

While many factors associated with children developing mental health needs may also affect their likelihood of *receiving* mental health services (e.g., poverty, exposure to trauma, stability in care arrangements), we do not know a whole lot about these issues. To be sure, studies on the use of mental health services by prisoners' children—and by offenders' children in general—are rare. As but one example, Phillips, Venema, and Roque (2010) explored the prevalence of unmet mental health needs among the

children of 77 male and female probationers in the United States, and demonstrated that nearly 4 out of 5 children (79%) who were identified by their parents as having a clinically significant emotional or behavioral problem were not receiving mental health services. Although it is unclear whether children of incarcerated parents fare similarly, nearly half of the probationers in this study had also served time in prison. Despite these findings, data limitations prevented the authors from exploring more rigorously the correlates of children's mental health service use.

Broader research on children's unmet mental health needs, often conducted using large-scale general population samples, reveals that children from disenfranchised families with mentally ill parents are less likely to receive treatment services (Kataoka, Zhang, & Wells, 2002). Flisher and colleagues (1997), for instance, found that children's unmet service needs are associated with factors including economic disadvantage, parental psychopathology, and parental concerns that children would be taken away against their will. Other studies have found that children from Latino and African American families are less likely to receive mental health services, as well as children who are uninsured or who have mothers with low educational attainment (Dettlaff & Cardoso, 2010; Kataoka et al., 2002). Many Native American children also have unmet mental health needs due to inadequate access to mental health care (Ogden, 2004; Vigesaa, 2013) and the cultural stigma attached to mental illness among tribal groups (Grandbois, 2005). In addition, Native American caregivers are often deterred from seeking services for children because treatment providers are not always competent about the traditional belief systems embraced in aboriginal cultures (Thompson, Walker, & Silk-Warner, 1993; Whitbeck, McMorris, Hoyt, Stubben, & LaFromboise, 2002).

Even children who are able to receive mental health services may not continue with them, as some studies show treatment attrition rates to be greater than 50%, with low-income, minority children at especially high risk (Kerkorian, Bannon, & McKay, 2006). Among these populations, stressors or practical barriers associated with going to treatment, perceptions that the treatment is irrelevant to the child's problems, and a poor relationship or alliance with the therapist are commonly associated with children dropping out of treatment prematurely (Garcia & Weisz, 2002; Kazdin, Holland, & Crowley, 1997). Engaging families in children's mental health treatment is challenging, and it requires a great deal of commitment on the part of caregivers (Gopalan et al., 2010). Outside of participating in treatment sessions, children are often required to complete homework assignments, discuss feelings, and demonstrate progress toward goals (Staudt, 2007). If caregivers cannot invest the necessary amount of time and effort required to help children carry out these tasks, or if they do not express the belief that treatment is worthwhile and beneficial, it is unlikely that children will continue in treatment (McKay & Bannon, 2004). Children with severe antisocial behavior problems, and children who have parents with a history of antisocial behavior, are also likely to terminate their treatment services (Kazdin, 1996).

Current Focus

Given the discussion above, it is likely that children of incarcerated mothers—who are disproportionately of racial and ethnic minority and experience substantial adversities

in their lives—have problems accessing and receiving mental health services. Nevertheless, it remains unclear why some children are able to receive these services over others. The objective of the current study, therefore, is to assess the sources of variation in mental health service use among children of incarcerated mothers according to various child, mother, and caregiver characteristics. In carrying out these investigations, the current study contributes to the literature in two important respects.

First, we rely on data collected from incarcerated women of various ethnic and racial backgrounds. Although the majority of literature on children of incarcerated parents in the United States focuses on male and African American prisoners—which is unsurprising given the demography of incarceration and its impact on Black communities (e.g., Wakefield & Wildeman, 2013; Western, 2006; Wildeman, 2009)—a review of the racial and ethnic landscape of incarceration reveals discernible heterogeneity. Thus, we wish to highlight the importance of continuing to include data on prisoners from various racial *and* ethnic groups (e.g., Latinas and Native Americans). Moreover, as women continue to represent one of the fastest growing segments of the American prison population (Carson & Golinelli, 2013), it is increasingly important that we gain a better understanding of the well-being of children of incarcerated mothers.

Second, we focus exclusively on the children of women confined in *prison* rather than jail or a combination of the two. As Holleran and Spohn (2004) point out, this is an important methodological distinction in that jail and prison are qualitatively different experiences.[2] Consequently, the service needs of children who experience prolonged separation from mothers may be masked when jail and prison are combined into one parental incarceration measure. In the end, our broader purpose in conducting this study is to shed light on the mental health status of children during maternal imprisonment.

Method

Data and Sample

Data for this investigation come from a larger study on the effects of parental imprisonment on children and families in Arizona. As part of this larger undertaking, face-to-face structured interviews were conducted with a sample of 300 mothers incarcerated in the Arizona Department of Corrections (ADC) during the spring of 2010 who reported having at least one minor child.[3] Survey questions were modeled after the Bureau of Justice Statistics' *Survey of Inmates in State and Federal Correctional Facilities*, which remains the key source for U.S. national estimates on children of prisoners (Glaze & Maruschak, 2008).

Every day, researchers were provided with an up-to-date count sheet of all inmates housed within a particular prison unit, and from that list, researchers randomly identified prisoners to approach. Because nearly three fourths of female inmates in ADC are housed in minimum security units, interviews were conducted in three minimum security units and in one unit that housed a combination of both minimum and medium

security prisoners in an effort to obtain a representative sample of the female prisoner population. The data collection process sought to minimize the role of ADC staff in seeking prisoner cooperation, and ADC personnel did not screen or recruit inmates for participation in the study. Prison staff would call the randomly selected inmates to a specified interview location where a member of the research team would discuss the purpose of the study, determine eligibility, and obtain consent. Prisoners were not informed of the project prior to speaking to the interviewers. All participants were guaranteed confidentiality and did not receive any incentives for their participation.[4]

All 300 eligible and interviewed women were asked to report information on up to eight of their biological, step-, or adopted children. These women were asked a series of questions regarding their children's living situations and needs prior to and during the incarceration, along with several questions relating to various adversities in children's lives (e.g., exposure to violence, exposure to drugs, and mental health problems). Interviews lasted approximately 30 minutes each and were conducted one-on-one in English and Spanish. Each inmate was only interviewed once. Interviewers read each survey question aloud along with possible responses and then recorded inmates' responses to questions directly onto surveys. Information recorded on each survey was later entered into a database by members of the research team. A thorough review of the data was also undertaken prior to data analysis to check for and correct any errors in data entry.

Cases missing information on children's mental health service needs were excluded from the sample ($n = 32$ children). Missing data due to item nonresponse on other key variables were handled using similar response pattern imputation (SRPI), which is available in PRELIS (Scientific Software International, Chicago, Illinois).[5] After the imputation process, the data contained complete information for 700 children corresponding to 286 incarcerated mothers. Children ranged in age from less than 1 year to 17 years, and the majority of mothers reported having two minor children ($M = 2.4$, $SD = 1.5$).[6] Empirical focus is placed on the subsample of children reported to have mental health needs that require treatment services ($n = 106$).

Reliance on Maternal Reports

We recognize that there are limitations associated with the sole reliance on incarcerated mothers' assessments of children's mental health needs (Johnson & Easterling, 2012). Imprisoned parents may be less aware of children's needs relative to caregivers and other individuals who have daily, in-person contact with children, and prisoners may not have cared for or lived with their children prior to imprisonment (Hairston, 2009; Hissel et al., 2011; Turanovic et al., 2012). It is also possible that incarcerated mothers may underreport problems and see themselves as "good mothers," or downplay their children's mental and behavioral needs (Lawrence-Wills, 2004; Williams, Lindsey, & Joe, 2011).[7]

Despite these concerns, it is important to note that 98% of mothers reported having provided primary care to their children and approximately 70% of mothers provided child care on a daily basis during the 12 months prior to imprisonment. Moreover,

89% of children in our sample were reported to have current contact with incarcerated mothers in the form of visits, phone calls, and letters. Although the estimated proportion of children with mental health needs in the data is likely conservative (Merikangas et al., 2010), we deem mothers' reports helpful for providing preliminary insights into their children's receipt of mental health services during imprisonment. Few other data sources can offer information on a diverse group of children experiencing prolonged periods of separation from incarcerated mothers, and prior research has found parent reports of children's mental health service use to be largely reliable (Hoagwood et al., 2000). Even so, if there is bias in the underreporting of mental health needs by mothers, it should result in sample selection bias. We address this concern specifically by estimating a regression model for sample selection (described below).

Selection Variable

The selection variable, *mental health needs* (1 = yes, 0 = no), reflects whether children have one or more mental health problems that require treatment services. This measure of mental health needs refers broadly to internalizing problems and general mental health disorders that require treatment services (Murray et al., 2012). Approximately 15.1% of the full sample of children were reported to have mental health needs at the time of interview (n = 106), and these children comprise our subsample of interest.[8] Children's needs were largely present prior to the current incarceration (82.7% of children's mental health needs were preexisting), and the average age of onset reported for children's mental health needs was 6.2 years (SD = 4.2, mode = 5).

Children's most commonly reported mental health needs included attention deficit hyperactivity disorder (ADHD, 36.8%), depression (22.6%), and serious aggression (15.1%). Others included bipolar disorder (12.5%), anxiety (6.4%), autism (3.6%), and post-traumatic stress disorder (3.2%). The extent to which our measure of mental health needs reflects clinical diagnoses reflected in the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association, 2013), however, is unknown. Despite criticisms that standardized tools such as the Child Behavior Checklist (CBCL; Achenbach, 1992) poorly assess internalizing and externalizing problems among disadvantaged and non-White children, such as those included in the current sample (see Lambert, Rowan, Lyubansky, & Russ, 2002), clinical assessments would prove useful in validating parents' reports. Nevertheless, such scales were not available in the data.

Dependent Variable

The primary dependent variable of interest, *receiving mental health services* (1 = yes, 0 = no), indicates whether children were receiving treatment services for their needs. Mental health services consist of medication, therapy, or any form of professional intervention designed to target children's mental health problems. Of the 106 children with mental health needs, mothers indicated that the majority (56.6%, n = 60) were currently receiving mental health services.

Covariates

The covariates we assess correspond to characteristics of children, mothers, and caregivers. With respect to child characteristics, in addition to *child age* and *gender* (1 = male, 0 = female), we include single-item indicators of whether children had been *exposed to violence* (1 = yes, 0 = no), whether children had *contact with Child Protective Services* (CPS; 1 = yes, 0 = no), and whether children had *in utero exposure to drugs* (1 = yes, 0 = no). In particular, exposure to violence was captured using a single survey item that reflected mothers' reports of whether children had encountered violence in the home, school, and/or community. Child contact with CPS and in utero exposure to drugs were similarly assessed using maternal reports. The survey items did not capture or inquire about the specific forms of violence that children experienced.

Several characteristics of children's mothers were also contained in the analysis, including *race/ethnicity, mental illness*, and *substance abuse*. Mental illness is a binary coded measure of whether mothers reported being professionally diagnosed with a mental illness (1 = yes, 0 = no), and substance abuse is captured using the Texas Christian University Drug Screen–2 (TCUDS-II; Simpson, 1995). Scores on substance abuse range from 0 to 3, where 0 indicates no substance abuse problems and 3 indicates severe substance abuse treatment needs. Finally, indicators for whether mothers had served time *in prison previously* (1 = yes, 0 = no) and whether mothers were incarcerated for a *violent offense* (1 = violent, 0 = otherwise) are included. Violent offenses for which women were imprisoned included crimes such as child/adult abuse, robbery, manslaughter, murder, aggravated assault, sexual conduct with a minor, negligent homicide, and kidnapping.

Because children's receipt of treatment services can be heavily influenced by those caring for them (Schneiderman, Smith, & Palinkas, 2012; Villagrana, 2010), several caregiver characteristics are considered. Specifically, we include indicators of *caregiver type* (1 = grandparent, 0 = otherwise), whether children were already in the care of their *caregiver before prison* (1 = yes, 0 = no), and whether caregivers were receiving *public assistance* to care for each child at the time of interview (1 = yes, 0 = no). Summary statistics for all variables included in the multivariate analyses are provided in Table 1.

Analytic Strategy

After conducting various model diagnostics to rule out the presence of harmful levels of collinearity, a multivariate regression model was estimated to determine the factors associated with children's receipt of mental health services. In particular, we estimated a two-stage probit model with sample selection. Because the information provided on children's receipt of mental health services may be conditional on the reporting of their mental health needs, selection into the subsample of interest is likely nonrandom. Under these conditions, statistical problems can arise that produce misleading regression estimates (Berk, 1983; Heckman, 1979; Stolzenberg & Relles, 1997). The two-stage model corrects for issues of selection bias by estimating simultaneously a probit

Table 1. Summary Statistics.

Variables	Full sample *M* (*SD*) or %	Subsample with mental health needs *M* (*SD*) or %	Range
Selection variable			
Mental health needs	15.1%	100%	0-1
Dependent variable			
Receiving services	—	56.6%	0-1
Child characteristics			0-1
Exposure to violence	32.9%	51.9%	0-1
CPS contact	37.4%	47.2%	0-1
In utero exposure to drugs	18.4%	23.6%	0-1
Child age	8.9 (4.7)	11.6 (3.9)	0-17
Child male	50.9%	58.5%	0-1
Mother characteristics			
Mother Black	11.0%	14.2%	0-1
Mother Latina	35.9%	25.5%	0-1
Mother Native American	8.8%	6.6%	0-1
Mother substance abuse	2.3 (0.8)	2.3 (0.8)	0-3
Mother in prison previously	39.4%	42.5%	0-1
Mother has mental illness	47.5%	67.9%	0-1
Violent offense	19.6%	25.5%	0-1
Caregiver characteristics			
Caregiver grandparent	44.4%	53.8%	0-1
Caregiver before prison	40.3%	24.5%	0-1
Caregiver public assistance	54.6%	49.1%	0-1
Exclusion restrictions			
Child has problems in school	19.5%	—	0-1
Parental rights terminated	17.4%	—	0-1
N	700	106	

Note. CPS = child protective services.

model for selection (in this case, predicting mental health needs using the full sample) with a second-stage probit model predicting the receipt of mental health services (using only the subsample of children with mental health needs). The two-stage probit is a straightforward maximum likelihood model that specifies the joint distribution between first- and second-stage equations and maximizes its corresponding log likelihood function (Jones, 2007).

An important component of the two-stage probit model is the inclusion of "exclusion restrictions," or variables that affect selection but not the dependent variable of interest (Bushway, Johnson, & Slocum, 2007). Including exclusion restrictions in the Stage-1 selection model reduces possible problematic correlations between Stage-1

and Stage-2 error terms. In the current study, two exclusion restrictions were identified: whether children were reported to have *problems in school* (e.g., getting in trouble, acting out, and receiving bad grades), and whether children's incarcerated mothers had their *parental rights legally terminated*. Children's problems in school were significantly correlated with their mental health needs ($r = .39$, $p < .001$) but not with whether treatment had been received for those needs ($r = .04$, $p = .70$). Likewise, the severing of parental rights was associated with the presence of mental health needs in children ($r = .08$, $p = .03$) but not with the receipt of mental health services ($r = .02$, $p = .85$).

Moreover, to take into account issues of nonindependence between children from the same parent, robust standard errors adjusted for clustering were used. Doing so is common for empirically correcting variance–covariance estimates when the data are not independently and identically distributed (Huber, 1967; White, 1980; Zorn, 2006). All statistical analyses were conducted using Stata 13.0 (Stata Corp, College Station, Texas).

Results

Before proceeding with the multivariate regression model seen in Table 2, we began by assessing bivariate correlations. Although correlation coefficients among independent variables did not exceed an absolute value of .40, additional model diagnostics were conducted to determine whether collinearity would bias the parameter estimates. Variance inflation factors (VIF) among variables within Table 2 were below 2.0, well below the standard "conservative" cutoff of 4.0 (Fox, 1991). Furthermore, the condition index values for the equations presented in Table 2 did not exceed 15, which is under the critical threshold of 20 specified by Leung and Yu (1996) for selection models. According to this evidence, observed correlations between the independent variables should not result in biased estimates or inefficient standard errors due to multicollinearity.

As seen in Table 2, the likelihood ratio test of independent equations for the two-stage probit model was only marginally significant at the $p < .10$ level ($\chi^2 = 2.73$, $p = .098$), indicating that selection bias was not an issue. Still, correlations between error terms (indicated by rho) were still nonzero. Following the recommendation of Bushway et al. (2007), we proceeded with presenting two-stage probit models because these equations produce more precise parameter estimates of theoretical relationships than models that do not correct for sample selection (see also Leung & Yu, 1996; Puhani, 2000).[9]

Results from the "Stage 1" selection equation in Table 2 show that child age ($b = 0.06$, $z = 3.51$, $p < .001$), maternal mental illness ($b = 0.40$, $z = 2.67$, $p = .008$), and maternal violent offending ($b = 0.42$, $z = 2.13$, $p = .033$) are positively and significantly related to selection into the subsample. Specifically, these findings indicate that older children, the children of mothers who have been diagnosed with a mental illness, and the children of mothers who are serving time for a violent offense are more likely to have mental health needs. It is also important to note that one of the exclusion

Table 2. Two-Stage Probit Model With Sample Selection.

	Child has mental health needs[a]			Child receiving mental health services[b]		
Variables	*b*	(*SE*)	*z*	*b*	(*SE*)	*z*
Exposure to violence	0.15	(0.15)	0.99	−0.78	(0.31)	−2.48*
CPS contact	0.24	(0.15)	1.57	1.15	(0.48)	2.41*
In utero exposure to drugs	0.05	(0.18)	0.27	0.42	(0.38)	1.13
Child age	0.06	(0.02)	3.51**	−0.03	(0.04)	−0.60
Child male	0.18	(0.14)	1.27	0.42	(0.29)	1.43
Mother Black	0.06	(0.26)	0.23	0.55	(0.48)	1.15
Mother Latina	−0.16	(0.17)	−0.91	0.10	(0.37)	0.26
Mother Native American	−0.10	(0.31)	−0.34	−1.64	(0.74)	−2.21*
Mother substance abuse	0.06	(0.11)	0.56	0.22	(0.20)	1.09
Mother in prison previously	0.09	(0.17)	0.51	−0.48	(0.34)	−1.42
Mother has mental illness	0.40	(0.15)	2.67**	−0.66	(0.38)	−1.73†
Violent offense	0.42	(0.20)	2.13*	−0.35	(0.39)	−0.91
Caregiver grandparent	0.12	(0.16)	0.78	0.82	(0.39)	2.12*
Caregiver before prison	−0.21	(0.15)	−1.38	−0.60	(0.44)	−1.38
Caregiver public assistance	−0.22	(0.15)	−1.44	0.06	(0.29)	0.20
Child has problems in school	0.99	(0.16)	6.31**	—	—	—
Parental rights terminated	−0.02	(0.18)	−0.10	—	—	—
Constant	−2.53	(0.38)	−6.72**	1.22	(1.19)	1.03
N	700			106		
Rho			−.63			
Likelihood ratio test			2.73†			
Model χ^2			31.90**			

Note. Entries are unstandardized coefficients (*b*) and robust standard errors (*SE*) adjusted for clustering of children by parent. CPS = child protective services.

[a]Stage-1 equation using full sample.

[b]Stage-2 equation using subsample of children with mental health needs.

†$p < .10$. *$p < .05$. **$p < .01$ (two-tailed test).

restrictions, problems in school, is significantly associated with the presence of mental health needs ($b = 0.99$, $z = 6.31$, $p < .001$), and that this effect occurred in the theoretically expected direction.

In keeping with our central research objective, findings presented from the Stage- 2 equation in Table 2 reveal several important characteristics of children, mothers, and caregivers that are associated with children's receipt of mental health services. With respect to child characteristics, two key findings emerge. First, exposure to violence is negatively and significantly related to the receipt of mental health services ($b = −0.78$, $z = −2.48$, $p = .013$), where children who have encountered violence (either as victims or witnesses) are less likely to be receiving mental health treatment for their needs. Second, children who have had contact with CPS ($b = 1.15$, $z = 2.41$, $p = .016$) are significantly

more likely to receive mental health services. In such instances, caseworkers may facilitate children's access to services or ensure that children attend treatment despite maternal absence.

With respect to the influence of maternal factors, the results in Table 2 demonstrate that children of Native American mothers ($b = -1.64$, $z = -2.21$, $p = .027$) and children of mothers who have been diagnosed with a mental illness ($b = -0.66$, $z = 1.73$, $p = .084$) are less likely to be receiving mental health services (but note that the effects of maternal mental illness are only marginally significant at the $p < .10$ level). Finally, in terms of caregiver characteristics, the findings in Table 2 indicate that children cared for by grandparents are more likely to receive mental health services during maternal incarceration relative to children cared for by fathers or other family members ($b = 0.82$, $z = 2.12$, $p = .034$). Compared with children's fathers and other relatives, it is possible that grandparents are more familiar with accessing health services, or that they have more time to devote toward guaranteeing that children receive treatment. Other caregiver characteristics we were able to assess, such as the obtaining of public assistance, were not significantly associated with children's receipt of mental health services ($p > .10$). Taken together, these findings reveal several sources of variation in children's receipt of mental health services during maternal imprisonment. These findings are discussed in more detail below.

Discussion

As the number of incarcerated women in the United States has increased dramatically over the past several decades (Blumstein & Beck, 1999; Kruttschnitt, 2010; Pratt, 2009), there have been growing concerns over the well-being of children of imprisoned mothers. Despite the considerable groundwork that has been laid to identify correlates of emotional and behavioral problems common among children of incarcerated mothers (e.g., Arditti, 2012; Phillips et al., 2002; Tasca et al., 2014), the factors associated with their mental health service use remained unclear. Accordingly, the purpose of this study was to examine the various child, mother, and caregiver characteristics associated with whether children receive mental health treatment during maternal incarceration. To that end, four conclusions are warranted.

First, children of incarcerated mothers who have been exposed to violence are significantly less likely to receive mental health services. This is problematic, particularly when considering that violence carries many long-term consequences for children (Macmillan, 2001; Turanovic & Pratt, 2015). Exposure to violence in childhood is known to lead to lingering problems that include substance abuse, criminality, posttraumatic stress disorder, suicidality, worsening depressive symptoms, and further victimization (e.g., DuRant et al., 2000; Finkelhor, Ormrod, & Turner, 2007; Saunders, 2003). It is possible that children exposed to violence are less likely to receive treatment because they fear having to divulge information about their traumatic experiences, or that family members are hesitant to facilitate children's mental health treatment out of concerns that they will be implicated in children's assessments (Paine & Hansen, 2002). Nevertheless, without mental health treatment, such children may

cope with trauma in maladaptive ways and be less equipped to tackle additional adversities in their lives (Hagen et al., 2005). Future research that can better identify the contexts surrounding the violence experienced by children of incarcerated mothers, as well as the various social and familial processes that explain why children exposed to violence are unable to receive mental health services, would be particularly useful as this line of work continues to develop in the future.

Second, children involved in CPS are significantly more likely to receive mental health services, thus highlighting the importance of state intervention in facilitating treatment to the children of incarcerated women. Such children face a multitude of family risks, and their involvement in CPS likely reflects histories of abuse and in-home maltreatment (Dettlaff & Cardoso, 2010; Mennen & Trickett, 2007). Despite the apparent advantages of CPS contact for children with mental health needs, we do not know how well this agency addresses the specific emotional and behavioral needs of these children, or how well CPS is able to facilitate access to specialized treatment. Limited financial resources and overburdened CPS staff may contribute to decisions to intervene in only the most severe instances (Cicchetti & Toth, 2005). Furthermore, CPS involvement may signify a response that is too late in terms of effectively treating children's ongoing mental health problems, and some caregivers may fear CPS workers or view CPS as a potentially repressive government agency (Kriz, Slayter, Iannicelli, & Lourie, 2012). Subsequent research that can assess how children of incarcerated mothers come to the attention of CPS and that can evaluate how effective CPS is in facilitating children's mental health treatment will certainly help enrich these findings.

Third, the various child, mother, and caregiver characteristics we find to be related to children's receipt of mental health services should be viewed as the products of larger social processes. Put simply, children are embedded in a broader social–structural context (Leventhal & Brooks-Gunn, 2000). As such, their receipt of mental health services will be influenced by the kinds of ecological processes (e.g., chronic resource deprivation and weakened institutions of social support) that set the stage for both the causes and consequences of maternal imprisonment (Sampson, 2012; Triplett, Randy, & Ivan, 2003; Wright, Pratt, Lowenkamp, & Latessa, 2012). Our finding that the children of Native American mothers are less likely to receive mental health services, for instance, may reflect these broader social processes. Native Americans are among the poorest ethnic groups in the United States, and their poverty is known to be closely linked to mental health crises (Grossman, Krieger, Sugarman, & Forquera, 1994). Indian reservations in particular are plagued by widespread disadvantage where quality health services are virtually nonexistent (Mihesuah, 1996). Mental illness is also highly stigmatized among certain tribes, and Native Americans are often discouraged from seeking help from Westernized treatment providers who are not attune to their cultural traditions (Grandbois, 2005). The daunting—and yet critically important—task for future research will be to measure directly these various social and cultural processes to determine the ways in which they influence the receipt of mental health treatment among children of incarcerated mothers.

Last, two key recommendations for policy emerge from this study. The first is that departments of corrections should collect information on the well-being of prisoners'

children during intake screening. In Arizona, for instance, no information is collected on whether prisoners are parents of minor children, nor is it known whether these children are currently in stable living situations, or whether they are struggling with significant mental health and behavioral problems. In an age of strapped state budgets and declining community resources, it is important to identify the population of children most in need of assistance. To reduce prisoners' apprehensions with discussing their children, this information should be gathered by caseworkers—not corrections officers—on women's admission to prison. Unlike corrections officers, caseworkers have ties to social service agencies and are not responsible for monitoring and disciplining inmates during their stay in prison. The second recommendation is that once this information is collected, it should be shared with agencies, such as CPS, that can conduct assessments and monitor children's well-being during their mother's stay in prison. To execute this effectively, state correctional agencies need to establish stable partnerships and enhance communication with social service providers in the community. Strengthening linkages between criminal justice agencies and family-based services is critical to reduce the negative impact of imprisonment on children, and to increase awareness of children's unmet needs.

Of course, no study is without its limitations, and we wish to recognize a few here that may be viewed as opportunities for future research. For instance, we were unable to determine whether the mental health treatment received by children was effective. It could be that children receiving mental health services still have significant needs (Jensen et al., 2011). Accordingly, research that can include indicators of treatment satisfaction or effectiveness would be particularly useful. In addition, we were unable to control for family process variables that may help explain why some children are more likely to receive mental health services than others. Children embedded in families that communicate well, problem-solve effectively, have well-defined roles, and support each other may be more likely to receive services (Beiser, Hou, Hyman, & Tousignant, 2002). It is possible that some of the effects we found could be attenuated had family process variables been included, and future research may help to explore this possibility. Last, gaining a deeper of understanding of children's unmet mental health needs may require a departure from the large-scale, structured surveys often conducted by criminologists. Research designs that use in-depth, qualitative interviews with incarcerated parents and caregivers may be better suited to identify the reasons why some children are unable to receive mental health services for their needs (see, for example, Arditti, 2012; Strozier, Armstrong, Skuza, Cecil, & McHale, 2011; Turanovic et al., 2012).

In the end, addressing the mental health service needs of children affected by maternal incarceration is extremely complex given the multiple adversities they face. It is likely that the receipt of mental health services among this population reflects broader social and structural problems that also influence child development, socialization, and parenting practices (Giordano, 2010; Sampson, 2012; Wakefield & Wildeman, 2013)—problems that are difficult to confront on a small scale. We encourage future research to continue to examine *why* and *how* some children are left vulnerable and in need by maternal imprisonment, and how best to address their mental health problems.

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Notes

1. The National Institute of Mental Health reports the prevalence of serious mental health disorders among U.S. children to be approximately 20% (Merikangas et al., 2010)—an estimate that is presumably higher among children of incarcerated mothers. Prior research is unclear regarding the proportion of children experiencing maternal imprisonment who have mental health needs. Studies have estimated mental health problems to be as low as 9% and as high as 50% in children of incarcerated parents (Murray & Farrington, 2008a; Phillips, Burns, Wagner, Kramer, & Robbins, 2002), although many of these studies do not focus exclusively on children of incarcerated mothers. Estimates of mental health needs likely vary according to the measurement of children's mental health problems (e.g., parent self-report vs. clinical assessment tools), and definitions of "children of incarcerated parents" used in existing literature (e.g., having a parent currently in prison vs. ever incarcerated in jail *or* prison).
2. In the United States, and specifically in Arizona, offenders confined in jail may be housed for several hours up to 1 year, whereas offenders sentenced to prison can serve sentences of 1 year up to life. As such, it is critical for research to differentiate between parental incarceration in jail and prison, given the distinct challenges these forms of imprisonment can pose for children.
3. Additional information on the data can be found at http://www.azcjc.gov/ACJC.Web/Pubs/Home/COIP_Final.pdf
4. Four hundred fifty-one female prisoners were approached by researchers. Of the approached inmates, 3.5% refused to participate in the study, 14% reported not having any children, and 17% indicated that their children were 18 years of age or older. Approximately 97% of children ($n = 683$) were the biological children of prisoners.
5. When compared with alternative strategies for handling missing data (e.g., listwise deletion and grand mean replacement), similar response pattern imputation (SRPI) has been shown to be effective and reliable (Gmel, 2001). Prior to imputation, 118 of the 12,600 cells in the data file contained missing values (0.9%).
6. Characteristics of incarcerated mothers were compared with official Arizona Department of Corrections (ADC) data from 2010 (e.g., race/ethnicity and offense type) and revealed that the sample of prisoners is representative of the women's state prison population. Conclusions cannot be drawn as to whether the study sample is representative of incarcerated *mothers* in the state, however, as ADC does not maintain records or collect information on prisoners who are parents of minor children.
7. Despite these concerns, it is not uncommon to rely on parents' accounts of their children's health and behavior (Fritsch & Burkhead, 1981; Geller, Garfinkel, Cooper, & Mincy, 2009; Wakefield & Wildeman, 2011; see also the National Longitudinal Survey of Youth and the Fragile Families and Child Wellbeing Study).

8. It is difficult to determine how the proportion of children with mental health needs identified here (15.1%) compares with prior research. Some studies estimate that approximately 50% of children whose mothers or fathers served time in jail or prison experience internalizing problems (Murray & Farrington, 2008a; Wakefield & Wildeman, 2011), whereas other studies using clinical samples present estimates closer to 19% (Poehlmann et al., 2008) or 9% for specific disorders such as major depression (Phillips et al., 2002). These estimates likely vary according to the types of mental health outcomes being studied, the way mental health problems are assessed, the sample type (e.g., general population vs. clinical), and how parental incarceration is defined (e.g., having a parent who has *ever* served time in jail or prison vs. *currently* incarcerated, or maternal vs. paternal incarceration). Moreover, we cannot compare our estimates with national averages because reporting systems, such as the Bureau of Justice Statistics, do not collect or disseminate such information on children of incarcerated mothers.
9. In simple two-part models (where models using the full sample and subsample are estimated separately with no correction for selection bias), standard errors were lower and regression coefficients were slightly larger, although the findings remained similar in terms of sign and significance.

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