



Article

Family Complexity and the Stress Process in Prison: How Sibling Living Arrangements of Minor Children Influence Maternal Role Strains

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Abstract: This paper offers a life-course stress process perspective on maternal role strain as a ‘pain of imprisonment’ by engaging the concept of ‘family complexity’ in the context of mass incarceration. I consider how the living arrangements of minor siblings (i.e., those living apart or together) during maternal incarceration functions as a form of family complexity. When minor children live apart from their siblings, they may experience more isolation which may further serve as a stressor for incarcerated mothers. A positive association between siblings living apart and maternal role strain would support a process of ‘stress proliferation’ across the prison-family interface. I investigate these connections using survey-based data on mothers with multiple minor children ($n = 80$) collected in 2011 from a voluntary sample of respondents housed in a federal minimum security prison in the United States. Multivariate logistic regression results indicate that minor siblings living apart during periods of maternal confinement elevates role strain among mothers (odds ratio = 3.66, $p < 0.05$). This connection is indicative of an ‘inter-institutional strain.’ Finally, children’s age also increases maternal role strain, but this finding is explained by sibling living arrangements during the mother’s incarceration.

Keywords: maternal incarceration; minor children’s sibling living arrangements; family complexity; maternal role strains

1. Introduction

The study of stress is well-developed in community settings across interdisciplinary literatures. However, as over 1.5 million persons are currently in state and federal prisons in the U.S. (Carson and Anderson 2016), more information is needed on stressors experienced while incarcerated. Classic research conceptualizes the stressors prisoners face as ‘pains of imprisonment’, including their material deprivations and individual frustrations (e.g., loss of autonomy, loss of security, loss of liberty) (Sykes [1958] 2007). In a more recent volume, *The Pains of Mass Imprisonment* (Fleury-Steiner and Longazel 2014), those classic pains are further augmented to include, for example, conditions of isolation through the more pervasive use of restrictive housing practices in prison (National Institute of Justice 2016).

Although early research concludes that women in prison experience similar pains of imprisonment to men in navigating these ‘total institutions’ (Goffman 1961; Heffernan 1972; Giallombardo 1966), other studies highlight a particular salience of families for how women fare in prison (Fox 1982; Kruttschnitt and Gartner 2005, p. 114; Ward and Kassebaum 1965). Given the six-fold increase in women’s imprisonment from the 1980s–2010, which is occurring at a faster rate than for men (Kruttschnitt 2010), understanding the contemporary stressors has implications for their health and well-being during and after periods of confinement. This line of inquiry is important because recent scholarship shows that, net of extensive covariates, recent maternal incarceration affects the physical, mental, and self-rated

health of mothers later in their life-course (Turney and Wildeman 2015). Yet, this research is limited because exact knowledge about the stress processes faced by women during imprisonment remains unknown and undertheorized, thereby preventing points of intervention. This article fills this gap in the literature by examining one aspect of the stress process among incarcerated women: stress proliferation from the living arrangements of their minor children during periods of confinement. This research may contribute to preventing some of the health problems formerly-incarcerated mothers face upon societal re-entry.

1.1. The Strains of Imprisonment

Research on women in prison draws on the stress process literature (Pearlin et al. 1981; Pearlin 1989) and Agnew's General Strain Theory (GST) (Agnew 2006, 2001; Agnew and DeLisi 2012) to further explore some of their pains of imprisonment. For example, Foster (2012) integrates these perspectives with criminal justice models of adaptation to imprisonment (Goodstein and Wright 1989) to classify these pains as 'importation' and 'deprivation' strains. Importation strains refer to those women who have endured prior to incarceration, where feminist scholarship has detailed the considerable adversities women have often encountered in their pathways to prison (Chesney-Lind 1997; Pollock 2002; McClellan et al. 1997; Sharp 2014). Stressors experienced while in prison, or deprivation strains, are separated temporally from importation strains.

Some research addresses deprivation strains in terms of family contact (Poehlmann 2005; Foster 2012). However, further insight into the deprivation strains women encounter while incarcerated is available through the concept of 'family complexity' (e.g., Sykes and Pettit 2014). More generally, this concept encompasses variations in family structure, sibling living arrangements, residential and custodial parenthood, and multiple-partner fertility (Furstenberg 2014; Manning et al. 2014; Sykes and Pettit 2014). Family complexity is also theoretically useful in attending to more meso-level features of families as institutions. I focus on minor children's sibling living arrangements during maternal incarceration as an aspect of family complexity and, particularly, the experience of minor siblings living apart from each other. One study of incarcerated women considers how maternal approval of children's custody arrangements reduces maternal role strain in prison (Berry and Eigenberg 2003). I extend this research by attending to the structural dimensions of child living arrangements. Estimates suggest that about 20–29% of children are affected by changes in sibling living conditions when a parent is incarcerated (see (La Vigne et al. 2008; Dallaire et al. 2015)).

The concepts of 'stress proliferation' (Pearlin 1989; Pearlin et al. 2005) and 'stress sequences' (Wheaton 1994; Thoits 1995) provide a basis for theorizing how maternal deprivation strains in prison may be interconnected. Stress proliferation involves situations where serious stressors tend to give rise to other additional stressors (Pearlin et al. 2005), and in this way, primary or initial stressors engender other subsequent or secondary stressors (Pearlin 1989). Stress proliferation can occur *across* generations, including from incarcerated parents to children (e.g., (Turney 2014)), as well as *within* an individual's own life course between earlier and later stress exposures (Wheaton 1994). Stress process scholarship has also explored how strains are connected, as well across conventional institutional settings of work and family, including those known as 'boundary-spanning,' cross-over, and spillover strains (Eckenrode and Gore 1990; Voydanoff 2005; Pearlin et al. 1981; Sweet 2014; Young et al. 2014). Pearlin (1989) discussed the concept of inter-role strains, a type of chronic or on-going strain, which encompasses stress between work and family roles (see also (Wheaton 1990)). In now engaging the prison context as a very distinct institution (or 'total institution' as Goffman (1961) suggested), I theorize that stressors experienced across the prison-family interface are not just role strains, but are better described as 'inter-institutional strains' (Foster and Hagan 2015; Agnew and DeLisi 2012; Foster 2012). While being in prison, one certainly takes on the role of the prisoner (Clemmer [1940] 1958), however, it is in a highly controlled and punitive institutional context, with all of its boundaries, rules, and regulations. Therefore, exploring stress proliferation across the prison-family interface involves a more meso-level institutional dimension.

In the contemporary context, the prison has become a central socializing institution in the lives of disadvantaged socio-economic, racial, and ethnic minority groups (Garland 2001; Pettit and Western 2004). My objective is to investigate how siblings living apart during periods of maternal incarceration may be connected to perceived maternal role strains while in prison. This connection is fundamentally intergenerational, where child circumstances in the families (as per the concept of family complexity) intersect with women's role-related experiences in prison, thereby constituting inter-institutional strain. These strains are cumulative and compounding: the separation of children from their mothers, as well as the separation of siblings from each other, may jointly amplify the strain mothers feel during periods of incarceration.

1.2. Background on the Prison-Family Interface

In Sykes' classic research on the pains of imprisonment in a maximum security men's prison, the 'deprivation of liberty' pertains to experiences of the inmates, where they are essentially cut off from society (i.e., family, friends, and relatives) (Sykes [1958] 2007, p. 65) or are contained through institutionalization (Fleury-Steiner and Longazel 2014). This perspective works well with the prisoner adaptation of 'hard-timing' where ties with the world outside are intentionally severed to minimize prisoner's strains (Nurse 2002). However, observers of women in prison, including prison warden Elaine Lord (Lord 1995), have reflected that female prisoners often remain 'interwoven' with their loved ones outside of prison (Pollock 2002). Therefore, it may be especially important to consider strains among female prisoners in order to engage and explore inter-institutional stressors. This component of the stress process in prison fits well with the life-course perspective through the principle of 'linked lives'—the idea that lives are lived interdependently or in relation to others (Elder 1998; Turner and Scheiman 2008). It is through these ties that the prison-family interface is experienced and negotiated. Stress proliferation may then occur from the outside world into the prison, or from the prison to the outside world.

In a clear example of stress flowing from the prison to the world outside, Megan Comfort (2008) provides rich insight into how the female spouses and partners of imprisoned men experience 'secondary prisonization.' She found these women experience extensive social control in their daily lives through their connection to their partners in prison. Yet, stressors may also flow from the outside in, as found in research where women's on-going concerns about the activities and well-being of their children affects them while behind bars (Houck and Loper 2002; Poehlmann 2005). It is this latter aspect that I further address in this paper by attending to inter-institutional strains around sibling living conditions during imprisonment.

Central to this research on inter-institutional strains is Berry and Eigenberg's study of key predictors of maternal role strains in prison (Berry and Eigenberg 2003). By using life course perspectives, this research can be expanded by considering how maternal role strains may be influenced by the 'timing in lives' (or children's age) of when maternal incarceration is experienced (Elder 1998). Maternal concerns about children may become particularly salient as children age and gain autonomy, especially when children move more often into community settings and have less supervision (e.g., (Aber et al. 1997)). Conversely, mothers may have heightened worries that events in early childhood may have long-lasting and even potentially indelible influences on children's development (e.g., (Heckman 2008)). We know, for example, that children's ages influence sibling living arrangements in the foster care literature. Some studies show that younger siblings are more likely to be placed together than are older siblings (Thorpe and Swart 1992; Shlonsky et al. 2003). Therefore, in terms of child placements, older children may be of particular concern.

1.3. Past Research on Correlates of Maternal Role Strain

Prior literature on the predictors of maternal role strains in prison include the mother being under the influence of drugs/alcohol at the time of arrest, the mother's number of children, the type of crime they committed, sentence length, maternal education, race, and age (Berry and Eigenberg 2003).

Berry and Eigenberg's study found that women who were racial and ethnic minorities were less likely than Whites to experience role strain. Other maternal factors include education, age, type of crime committed, number of children, and being under the influence of drugs/alcohol at the time of their arrest. These latter variables were non-significant influences on maternal role strains in their multivariate model. However, these variables are included here as maternal controls, given that they may affect both sibling living arrangements during maternal incarceration and, potentially, also maternal role strains. Sentence length is not currently included in the present study due to ambiguities in how this question was asked through an open-ended format. This led to difficulties in interpreting how responses were provided in terms of both months and years. Sometimes the same information was indicated twice (e.g., 60 months or five years) and other times responses seemed to indicate distinct information (e.g., three months and two years). This issue is revisited in the conclusion of this study. Finally, other research on child placements during maternal incarceration include structural factors, including maternal education and other socio-economic factors (Johnson and Waldfogel 2004).

Berry and Eigenberg (2003) found that maternal role strain was reduced if the incarcerated mother approved of the child's custody arrangements. Additional information on the structural features of children's living arrangements will further clarify how child factors influence maternal role strains. National data show that when mothers are incarcerated, children live in a variety of living situations, but they most often involve grandparent care (45%) (Glaze and Maruschak 2010, p. 5). Furthermore, among federal prisoners, most incarcerated women had lived with their children before incarceration (78.3%) (Glaze and Maruschak 2010).

In the foster care literature, when children live in kinship care rather than traditional foster care, they are more likely to be placed with their siblings (Shlonsky et al. 2003), indicating that children's placement situations during maternal incarceration may be consequential for determining whether siblings live apart. I, therefore, include an indicator of the children's type of living situation. Furthermore, in studies of foster care, mixed findings are seen around race and ethnicity. Some research finds African American and Hispanic sibling pairs are more likely to be placed together than are White sibling pairs (Staff and Fein 1992), yet other studies find no group differences (Shlonsky et al. 2003). Finally, regarding children's gender, mixed findings are again seen in the foster care literature on sibling placements (Shlonsky et al. 2003; Staff and Fein 1992). In the current study, questions were asked in detail about the woman's eldest minor child's age, gender, whether they lived with their mother before imprisonment, and their current care situation. These variables are included in the following analyses adding details on child factors to maternal predictors (Berry and Eigenberg 2003).

In sum, this paper investigates three research questions: (1) What are the maternal and child structural predictors of whether minor siblings of an incarcerated mother live apart or together? (2) When minor siblings live apart, is this separation associated with more maternal role strain during the mother's time in prison? (3) If so, do child factors explain how sibling living arrangements influence maternal role strains?

2. Methodology

2.1. Data

Data for this study were gathered in 2011 through a self-administered questionnaire completed by a voluntary sample of female inmates at a Federal Prison Camp for women, a minimum security institution. University and Federal Bureau of Prisons IRB approvals for this project were obtained. All inmates at this facility were eligible for inclusion in the study. Participants were recruited through posters at the prison as well as through announcements. All participants signed an informed consent form prior to completing the survey. Questionnaires took, on average, between 30–45 min to complete and were filled out in two classrooms in the prison. These questionnaires were administered in a paper format with pens and pencils in compliance with prohibitions around bringing in electronics to this institution. A total of 211 women participated in the survey and 201 of these were Latinas, African

American women, and non-Hispanic White women. Mothers of other race and ethnicities were not included because of their low numbers in the sub-sample. Respondents with multiple minor children were included in the sub-sample for these analyses ($n = 80$).

2.2. Measures

2.2.1. Maternal Role Strain

Three questions were used to measure maternal role strain in prison from Berry and Eigenberg's study (Berry and Eigenberg 2003) that they modified from Simon's research (Simon 1992). These included: (1) "Do you ever feel you miss out on the pleasures of being a parent?"; (2) "Do you ever feel that your children do not get the attention from you that they need?"; and (3) "Do you ever worry that incarceration affects your role as a parent?" The response scale for these items ranged from never (1) to frequently (4). The Cronbach's alpha for this scale was 0.79. All items were skewed toward the response of frequently (4) with some variation among the other responses. Each question was, therefore, dichotomized using this skewed distribution. High levels of maternal role strain (i.e., a response of 4 on the scale measure) were coded as 1, while all other responses to the scaled question were coded as 0.

2.2.2. Living Arrangements

Participants were asked the several questions about their minor children. Women were asked, "If you have multiple children under age 18, do they live together or are they separated?" with responses of siblings living apart as (1) vs. being placed together (0). Mothers were also asked about the eldest minor child's living arrangements before and during incarceration. To gauge the focal child's living arrangements prior to maternal incarceration, a dichotomous variable was created using the following question: "Was she or he living with you before you were arrested this last time?" where yes was coded 1 and no was coded 0. Finally, the focal child's current living arrangements were measured from a question that asks "Who is caring for him or her while you are in prison?" Responses were coded to indicate grandparent care (1) vs. all other arrangements (0) (including father care, residing with friends, other relatives and foster care). Grandparent care is the modal category of care among children of incarcerated mothers nationally and in the current sample, as well (Glaze and Maruschak 2010). With the exception of the question on siblings, these other questions on living arrangements and demographic variables were based on prior research (Crouch et al. 1999; Mullings et al. 2002).

2.2.3. Maternal and Child Controls

Maternal race and ethnicity was measured through participant self-reported information on racial identity. Dummy variables were created to indicate Latina ethnicity (1) or African American racial identification (1) and non-Hispanic Whites are the referent category. Education was measured as women's highest level of education at the time of the interview, ranging from less than Grade 6 (one) to one or more years of graduate school (14). The midpoint of this scale corresponds to Grade 11 (seven). All women who participated in the survey were asked "Do you have children?" If the respondent indicated yes, then she was asked "How many?", and this information was used to indicate her number of children. Women's offenses were measured through an open-ended question which was recoded into whether the offense was a drug crime (1) or some other offense (0). Respondents were also asked if they felt they needed or were dependent on drugs or alcohol prior to their incarceration. A positive result indicates substance dependency (1). Finally, information was also gathered from mothers on their eldest minor child, or the focal child, yielding information on the child's age (in years) and gender (female = 1).

2.3. Analytical Plan

Logistic regression in Stata 14.2 (StataCorp 2015, College Station, TX, USA) was used to estimate the odds that the eldest minor child was living apart from other minor siblings at the time of the survey, net of maternal and child background characteristics. I then examined whether sibling separation influenced maternal role strain, net of other relevant maternal and child factors. A positive association between these variables would indicate stress proliferation across the prison-family interface. I add maternal variables first, as per prior literature (Berry and Eigenberg 2003), and then incorporate the child factors, followed by the sibling living arrangements measure. By adding children's sibling living arrangements in the final model predicting maternal role strain, I examine whether this variable may mediate any influences of children's demographic factors, particularly children's age. These steps are in keeping with Baron and Kenny's guidelines for mediation analyses, and are appropriate for dichotomous outcomes when, as exploratory analysis reveal, there is no interaction between the child's age and siblings living arrangements on maternal role strain (Baron and Kenny 1986; MacKinnon and Dwyer 1993; VanderWeele and Vansteelandt 2010, p. 1339). Furthermore, where appropriate, results of logistic regression models are then interpreted through the use of predicted probabilities for additional clarity (StataCorp 2015, College Station, TX, USA; Long and Freese 2014). A marginal effect shows the change in the probability of high levels of maternal role strain, for example, for a change in the central independent variable, holding all other variables at their means (Long and Freese 2014, p. 239). The standard errors of marginal effects are computed using the delta method and indicate if a marginal effect (predicted probability) is different from 0 (Long and Freese 2014, p. 244). The S-post commands used with Stata provides an estimate of whether the change between predicted probabilities is significant (Long and Freese 2014).

3. Results

Table 1 displays descriptive statistics for the analytic sample. Approximately 39% of mothers with multiple children report that these minors were living apart at the time of the survey. About 73% of mothers were living with their eldest minor child prior to incarceration, and 36% mothers report that their eldest minor child was living with his or her grandparents. Furthermore, Latinas comprise 49% of this sample, while 11% are African Americans and 36% are non-Hispanic Whites. Broader statistics from this prison show 40% of inmates are Latinas, 18% are African Americans, and 40% are non-Hispanic Whites. National statistics show that in the federal system, Latinas comprised 32 percent of the women in the federal system, 35% are African Americans and 32% are non-Hispanic Whites (Greenfeld and Snell 1999). African American women are, therefore, underrepresented in the current sample, but the race and ethnic composition of the present sample mirrors that of the overall institution. As well, there are more Latinas in this sample than in the older national data reported above. This trend corresponds with national patterns where, for example, in 1992, Latinos comprised 23 percent of all of those sentenced to federal prison, but by 2012 this share had grown to 48 percent (Light et al. 2014).

Furthermore, incarcerated mothers had on average 7.74 years of education which corresponds to between 11–12th grades in the metric of the scale. The majority of mothers in this sample were incarcerated for drug crimes (74%), which corresponds with existing research that shows that seventy-two percent of women in federal prison are incarcerated for drug offenses (Greenfeld and Snell 1999). Additionally, in 2015, more than half (59%) of prisoners in federal prison were serving time for drug offenses (Carson and Anderson 2016). Furthermore, many mothers (65%) indicated they had a drug or alcohol dependency problem before prison. Mothers with multiple minor children had on average 3.38 children, with a range of two to seven children. The focal child in the analytic sub-sample is about 12.7 years old, and 43% of them were females.

Table 1. Descriptive statistics on incarcerated mothers with multiple minor children (n = 80).

	M	SD	Range
Maternal Variables			
Maternal role strain	0.51	-	0–1
Latina	0.49	-	0–1
African American	0.11	-	0–1
Non-Hispanic White	0.36	-	0–1
Mother's Education Level	7.74	2.34	3–14
Age	34	5.60	23–47
Number of Children	3.08	1.12	2–7
Incarcerated for Drug Crime	0.74	-	0–1
Substance Dependency Before Prison	0.65	-	0–1
Child Variables			
Minor Siblings Live Apart vs. Together	0.39	-	0–1
Mother Lived with Child Before Arrest	0.73	-	0–1
Grandparent Care During Incarceration ^a	0.36	-	0–1
Child Age	12.66	3.84	1–17
Child Gender (female = 1) ^b	0.43	-	0–1

Reference categories: ^a all other care arrangements; ^b females = 1; males = 0.

3.1. Sibling Living Arrangements

The results of multivariate logistic regression analyses predicting minor siblings' living arrangements during maternal incarceration are presented in Table 2. Model 1 indicates that minor child siblings of Latinas are less likely to live apart than are those of non-Hispanic Whites ($b = -1.17$, $p < 0.05$). Furthermore, higher levels of maternal education reduce the log odds of minor child siblings living apart ($b = -0.31$, $p < 0.05$). Model 2 further shows that when child factors are added to the model, the influence of being a Latina on sibling living arrangements among mothers on children living is explained ($b = -1.14$, $p > 0.10$). However, maternal education continues to decrease the likelihood of minor siblings living apart ($b = -0.45$, $p < 0.01$). Model 2 also shows child demographic factors are influential, where older children are more likely to live apart from one another when mothers are incarcerated than are younger siblings ($b = 0.26$, $p < 0.05$). Using predicted probabilities to further interpret this effect, very young children (age 2) have a probability of living apart of close to zero, whereas the probability of children aged 12 living apart is just over 0.3 ($p < 0.001$). By 17 years of age, children are more likely to be living apart than together with a predicted probability of 0.6 ($p < 0.001$).

Table 2. Logistic regression of minor siblings living apart during maternal incarceration on predictors.

	1	2	3 OR
Maternal Factors			
Latina ^a	−1.17 * (0.59)	−1.14 (0.79)	0.32
African American	−0.43 (0.91)	0.01 (1.05)	1.01
Maternal Education Level	−0.31 * (0.13)	−0.45 ** (0.16)	0.64 **
Age	0.004 (0.05)	−0.09 (0.06)	0.91
Number of Children	0.22 (0.25)	0.06 (0.28)	1.06
Incarcerated for Drug Crime	0.63 (0.68)	0.41 (0.73)	1.51
Substance Dependency Before Prison	−0.24 (0.59)	−0.52 (0.65)	0.59
Child Factors			
Child Age		0.26 * (0.11)	1.29 *
Child Gender ^c		−0.23 (0.59)	0.80
Mother Lived with Child Before Arrest		−1.07 (0.81)	0.34
Grandparent Care During Incarceration ^b		0.38 (0.61)	1.46
Constant	1.32 (2.08)	3.86 (2.55)	
LR Chi-squared	15.59 *	24.05 *	
Pseudo R ²	0.14	0.23	

Reference categories: ^a non-Hispanic White; ^b all other care arrangements; ^c females = 1; males = 0. * $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$ (two-tailed).

3.2. Maternal Role Strain

Table 3 presents the odds of maternal role strain, net of maternal and child predictors. In Model 1, maternal factors are incorporated into the model, and only substance dependency is found to be marginally significant in increasing high levels of maternal role strain ($b = 0.89$, $p < 0.10$). Child factors are added in Model 2, where children's increasing age positively influences maternal role strain ($b = 0.20$, $p < 0.05$). Furthermore, mothers with female children are more likely to experience role strain while in prison ($b = 1.35$, $p < 0.05$). Children's living arrangements before maternal incarceration and the type of care placement during this period do not exert net significant influences on maternal role strain. However, minor children's sibling living arrangements are included in Model 3, and when siblings live apart during maternal incarceration, child separation increases maternal experiences of role strain ($b = 1.30$, $p < 0.05$). This coefficient corresponds with an odds ratio of 3.66. As further shown in Figure 1, with all other variables held at their means, mothers have a predicted probability of 0.7 ($p < 0.001$) of experiencing high levels of maternal role strain while in prison if their minor children are living apart. If their children are living together during her incarceration, they have a relatively lower probability (0.39, $p < 0.001$) of experiencing high levels of maternal role strain. The difference between the two predicted probabilities (0.31) of high levels of maternal role strain is significant at $p < 0.05$, as indicated in Figure 1.

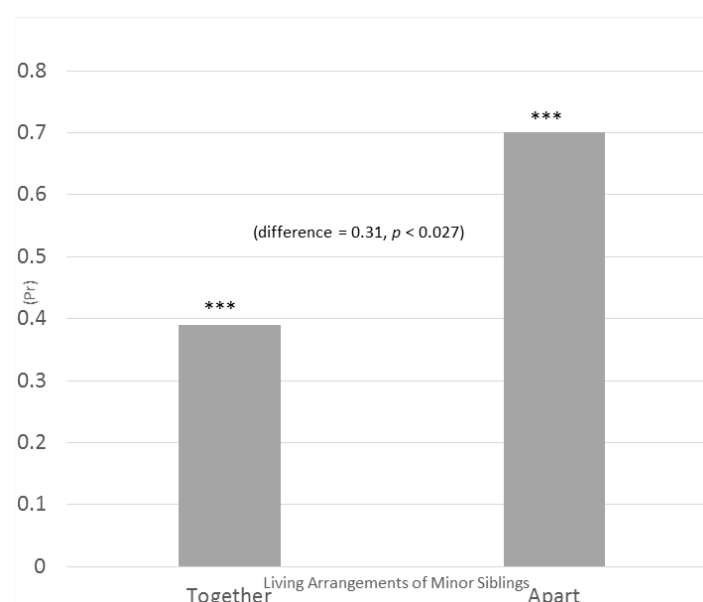


Figure 1. Predicted probability of high maternal role strain during incarceration. Note: Estimates include controls for maternal and child demographic characteristics, with these measures held at their mean values.

Table 3. Logistic regression of maternal role strains on siblings living apart during maternal incarceration net of maternal and child factors.

	1	2	3	4 (OR)
Maternal Factors				
Latina ^a	−0.49 (0.53)	−0.91 (0.74)	−0.64 (0.77)	0.53
African American	−1.02 (0.87)	−1.57 (1.03)	−1.57 (1.07)	0.21
Maternal Education Level	0.06 (0.11)	0.05 (0.12)	0.15 (0.13)	1.16
Age	−0.01 (0.05)	−0.10 (0.06)	−0.08 (0.06)	0.92
Number of Children	−0.13 (0.24)	−0.32 (0.26)	−0.38 (0.27)	0.69
Incarcerated for Drug Crime	−0.10 (0.60)	−0.16 (0.66)	−0.22 (0.70)	0.80
Substance Dependency Before Prison	0.89 [†] (0.54)	0.79 (0.58)	0.97 (0.62)	2.63

Table 3. Cont.

	1	2	3	4 (OR)
Child Factors				
Child Age		0.20 * (0.10)	0.15 (0.10)	1.17
Child Gender ^b		1.35 * (0.56)	1.51 * (0.60)	4.52 *
Mother Lived with Child Before Arrest		0.21 (0.75)	0.44 (0.77)	1.55
Grandparent Care During Incarceration ^c		−0.28 (0.56)	−0.38 (0.58)	0.68
Siblings Living Apart During Incarceration			1.30 * (0.64)	3.66 *
Constant	0.32 (1.94)	0.94 (2.27)	−0.44 (2.41)	
LR Chi-squared	7.02	16.84	21.28 *	
Pseudo R ²	0.06	0.15	0.19	

Reference categories: ^a non-Hispanic White; ^b females = 1; males = 0; ^c all other care arrangements. [†] $p \leq 0.10$, * $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$ (two-tailed).

4. Discussion

While there is a need to curtail mass imprisonment for non-violent offenses in light of the now myriad documented family and community collateral consequences (National Research Council et al. 2014), more immediate measures must also be identified to better support incarcerated women and their families. This study of women incarcerated at a federal minimum security prison delves into their pains of imprisonment, addressing gaps in the contemporary literature on family complexity, maternal incarceration, and the resulting strain that affects the mental health of mothers behind bars. It also brings the prison as an major contemporary socializing institution (Pettit and Western 2004) more prominently into the stress process literature which is more often focused on community samples.

The main finding of this study supports a process of stress proliferation for women in prison. Stress proliferation has been investigated in community contexts, but this is the first study of how deprivation strains are interconnected during periods of imprisonment. This interconnection occurs across the prison-family interface, producing a stress process that invariably leads to inter-institutional strain as a contemporary pain of imprisonment. The results showed that sibling separation while the mother is incarcerated increases maternal role strains during confinement. In fact, mothers are about four times more likely to experience high levels of maternal role strain under these conditions than if their minor children resided together. These findings are consistent with the life-course principle of linked lives (Elder 1998), and the results point to how mass incarceration exacerbates family complexity during periods of maternal imprisonment through residential displacement among minor siblings (Sykes and Pettit 2014). Furthermore, by identifying strains involved in processes of stress proliferation, this study also suggests a point of intervention to reduce maternal strains while in prison. These efforts may aid in preventing health problems found among recently-incarcerated women residing in the community (Turney and Wildeman 2015), and may help to explain childhood behavioral problems associated with parental incarceration (Wakefield and Wildeman 2014).

Furthermore, sibling living arrangements are associated with social structural conditions and conditions of social inequality. This research, therefore, points to potential avenues for social policy aimed at better supporting incarcerated women and their families prior to and during periods of confinement. Specifically, higher levels of maternal education are protective against siblings being separated. While further investigation of this association is needed with larger samples, this study found it held, net of multiple control variables, suggestions of socio-economic factors that help to shape sibling living conditions.

As per the foster care literature (Thorpe and Swart 1992; Shlonsky et al. 2003), this study also found that older children are less likely to co-reside with their siblings when mothers are incarcerated. These findings then also point to developmental considerations regarding children's ages when maternal incarceration occurs, consistent with the timing of events in the life-course (Elder 1998). Women in prison may have more family or friend support for multiple minor children if these siblings are younger in age. Older minor siblings, however, are more likely to experience separation when mothers

are incarcerated. Some recent studies have shown that under some conditions, having siblings live together during maternal incarceration is protective against internalizing and externalizing behavior problems (Dallaire et al. 2015; Woodward and Copp 2016). Therefore, it may be especially pressing for policy to consider the living circumstances of older siblings in families of incarcerated women, and to investigate children's educational outcomes in relation to these circumstances.

Additionally, in keeping with life-course perspectives, this study shows that children's age increases the chances of sibling separation, and this factor also increases high levels of maternal role strain. Furthermore, the living arrangements of minor children during maternal incarceration partially explains how children's age is related to maternal role strain. These findings suggest that older children increase maternal role strain, in part, through being separated during this time period. It may be particularly useful, then, for research on maternal strains to consider carefully the age at which children are exposed to maternal imprisonment (Elder 1998).

Building on these initial cross-sectional findings, future research is needed that takes a longitudinal and dynamic approach to tracking the living situations of children over time during parental incarceration. These directions may yield insight into key life-course concerns that influence both stability and change in children's lives (Fomby and Cherlin 2007; Sampson and Laub 1993). Research on the dynamics of sibling living arrangements would be consistent with Manning et al.'s research on family complexity in children's lives in other contexts (Manning et al. 2014). These dynamic directions may further the understanding of family complexity in relation to mass imprisonment and its association with the well-being of highly-marginalized women and their families (Sykes and Pettit 2014). For example, detail is needed on how many siblings were living together before maternal imprisonment and, of those, how many then co-resided when mothers are incarcerated. Information is needed on how many children also lived elsewhere during this period. This type of fine-grained data should also include whether the mother lived with all of her minor children before imprisonment. In the present study, follow-up interviews were conducted with 35 women who participated in the survey to gather details on all children of the incarcerated mother. Further large-scale research would systematize these efforts and further illuminate the family complexity associated with maternal imprisonment and its potential consequences for the residential stability of minors.

Details are also needed on women's own living conditions before prison. While this study included a rough measure of where women were living prior to arrest, most women lived in their own place or in someone else's place, and few lived on the streets, in a treatment facility, or in a shelter. Further research with a larger sample may add more detailed information on women's living arrangements before incarceration including, potentially, the experience of eviction, which has been tied to paternal incarceration (Desmond 2016), but may also be relevant to understanding maternal incarceration. Sustained further research on the dynamics of children's living arrangements may illuminate Wakefield and Wildeman's guiding observation that child marginalization is, in part, linked to parental incarceration through child living arrangements (Wakefield and Wildeman 2014, p. 116). As the present study shows, research on children's sibling living arrangements helps to clarify the specific components involved for mothers, and future research could further illuminate these consequences for children.

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