# Parental Incarceration and Child Sleep and Eating Behaviors

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**Objectives** To examine whether parental incarceration is significantly associated with a number of sleep and eating behaviors among offspring during early childhood.

**Study design** Data from the Fragile Families and Child Well-Being Study, an at-risk sample of parents and their offspring, were employed to test this possibility. Both maternal and paternal incarceration history were examined as predictors of whether children manifested high levels of the following 7 health behaviors: sleep problems, short sleep duration, salty snack consumption, starch consumption, sweets consumption, soda consumption, and fast food consumption. Logistic regression techniques were used to carry out the analyses.

**Results** Both maternal and paternal incarceration significantly increased the odds of a number of risky sleep and eating behaviors during childhood. Ancillary analysis also revealed that the predicted probability of exhibiting multiple risky behaviors across the sleep and eating domains was twice as large among children whose parents had both been incarcerated, relative to children whose parents had not been incarcerated.

**Conclusions** Parental incarceration may have important implications for the sleep and eating behaviors of offspring. Both scholars and practitioners may, therefore, want to consider the possible negative repercussions of parental incarceration for the sleep and eating behaviors of children, and the potential for these high-risk health behaviors to compromise the health and well-being of children as they age. *(J Pediatr 2017;185:211-7).*

The relatively large proportion of incarcerated adults in the US, who are also parents, has a profound impact on children growing up in these disrupted homes. An emerging body of literature using multiple data sources has documented many of the collateral effects of imprisonment on children and families. These include, but are not limited to, reports of academic and socioemotional skills deficits,[1-3] antisocial and criminal behavior, internalizing symptoms, and related mental health problems,[3-6] illicit drug use,[7] and food insecurity among children whose parents have been incarcerated.[8,9]

Although a few recent investigations have examined health outcomes among adults who have had a parent incarcerated,[10-13] surprisingly few studies have systematically examined the link between parental incarceration on health outcomes during childhood.[14] In particular, the effects of parental incarceration on key childhood health behaviors such as sleeping and eating patterns have received little empirical attention. This is an important oversight in the literature, as there is little scientific debate that sufficient sleep and an adequate diet are cornerstones for healthy development. This is perhaps especially true in the case of sleep and dietary behaviors during early childhood because of the substantial plasticity of the brain during early life stages.[15] This plasticity is reflected in a body of literature that has linked sleep and dietary practices among preschool and young school-aged children (eg, 5- to 6-year-olds) to a number of other developmental risk factors. For instance, poor sleep and dietary intake during early childhood have been linked to diminished cognitive functioning,[16,17] poor school performance,[18,19] and conduct problems.[20-22] Consensus messages regarding sleep and diet as important components of healthy development can be readily viewed not only in a number of journal articles,[23,24] but also in the health guidelines provided by scientific organizations such as the American Academy of Pediatrics and the Academy of Nutrition and Dietetics.[25,26] Given the relatively high rates of imprisonment, particularly in vulnerable minority communities, examining the links between maternal and/or paternal incarceration and childhood sleep and eating behaviors is a worthwhile endeavor, especially because these sleep and eating behaviors are, for the most part, modifiable.

Our objective was to explore whether parental incarceration is significantly associated with child sleep and eating behaviors. Consistent with the aforementioned findings revealing increased family disruption and vulnerability in response to parental incarceration, we hypothesize that children whose parents have been incarcerated will exhibit riskier sleep and eating behaviors.

## Methods

Data from the Fragile Families and Child Well-being Study (FFCWS) were used in the current study. Approval for the current study was obtained from the Institutional Review Board of the University of Texas at San Antonio. The FFCWS is a longitudinal study of 5000 couples and their offspring born in the US between

FFCWS Fragile Families and Child Well-Being Study

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1998 and 2000. Available data follow high-risk families from the child's birth through late childhood. The sample was selected through a 3-stage process in which low-income, unwed couples were oversampled. First, a stratified random sample of 20 cities was obtained from the population of large US cities (ie, those with at least 200 000 residents). Next, a sample of 75 hospitals was taken from these 20 cities, followed by a random sample of both married and unmarried couples who agreed to participate in the study. At the first wave of data collection, only 25% of couples were married, and another 36% were unmarried and cohabiting. By the final wave of data used in the current study, 32% of couples were married, and 14% were unmarried and cohabiting. The data are well-suited to the current study, as they include a sufficient number of parents who have been incarcerated, as well as a number of items covering the sleep and eating behaviors of the offspring during childhood.

At the fourth wave of data collection, when focal children were approximately 5 years old, parents were asked a number of questions concerning the child's involvement in behaviors that can pose risks to their health including sleep problems and short sleep duration. To measure sleep problems, mothers were presented with the following statement concerning their child: "(He/She) has trouble getting to sleep." Focal children whose mothers reported that the statement was sometimes or often true were assigned a value of 1 (0 for a "not true" response). To measure short sleep duration, mothers were asked, "How many hours of sleep a night does the child usually get?" According to the National Sleep Foundation, school-aged children need between 9 and 11 hours of sleep per night for healthy functioning.[27] Children who scored below this amount (≤8 hours) were in the bottom quartile of the distribution and were assigned a value of 1, whereas the remaining number of children were assigned a value of 0 (mean = 9.4 hours).

The next set of child health behaviors measured in the present study cover eating behaviors such as salty snack consumption, starch consumption, sweets consumption, soda consumption, and fast food consumption. During the in-home survey at the fourth wave of data collection, primary caregivers were asked, "On a typical day, about how many servings of the following foods does (the child) eat?": (1) salty snacks (eg, chips, pretzels, etc.); (2) starches (eg, bread, cereal, spaghetti, etc.); (3) sweets (eg, candy, cake, etc.); (4) soda (eg, Coke, Pepsi, etc.); (5) fast food (eg, McDonald's, KFC, etc.).

Response options ranged from none (0) to 5 or more (5). To tap particularly high frequencies of poor eating behaviors, scores on each of these items were dichotomized. Specifically, for each of the eating behaviors, children who scored within the top quartile (ie, above the 75th percentile) were assigned a value of 1 and all others a value of 0. Alternative coding strategies did not alter the substantive results of the study. Finally, we assessed multiple risky health behaviors across the sleep and eating domains by assigning a value of 1, if children met both of the following conditions: (1) they experienced short sleep durations and/or sleep problems at wave 4; and (2) they reported poor eating behaviors in 1 or more of the examined eating domains (1 in 5 children in the FFCWS met these criteria). If they did not meet both of these criteria, they were assigned a value of 0.

The FFCWS include a number of parents with a history of criminal justice involvement, including incarceration. Mothers and fathers were classified as having a history of incarceration if the mother, the father, or both reported that the mother/father had spent time in jail or prison at or before the fourth wave of data collection (46% of fathers and 12% of mothers). Finally, an index of parental incarceration was also created. To create the index, children of families in which neither parent had been incarcerated by wave 4 were assigned a value of 0 (52%), children of families in which only 1 parent had been incarcerated by wave 4 were assigned a value of 1 (42%), and children of families in which both parents had been incarcerated by wave 4 were assigned a value of 2 (6%).

In addition to the key independent and dependent variables of interest, the child's age (in months), race (nonwhite = 1), and sex (male = 1) were included in the analysis as covariates as well as the following parental characteristics: maternal education, household income, maternal depression, and maternal involvement. With respect to maternal education, response options ranged from no formal schooling (1) to graduate or professional school (9). A measure of quintile-based household income was also used in the present study. The FFCWS data also include an indicator of whether the child's mother met the clinical criteria for depression at the third wave of data collection. The measure uses the 12 month Diagnostic and Statistical Manual for Mental Disorders diagnosis from the Composite International Diagnostic Interview–Short Form, version 1.0. The measure is a count of the number of depressive symptoms (eg, restlessness, sadness, loneliness, poor appetite, trouble concentrating, and poor sleep) ranging from 0 to 7, with subjects receiving a score of 3 or more being designated as meeting the clinical criteria for depression.

Finally, a measure of maternal involvement with the child was also included in the study as well as a measure of cognitively stimulating activities at wave 2 of data collection. At this wave, mothers reported on how many days a week they played peek-a-boo with the child, sang songs, read stories, told stories, played inside games (eg, blocks), visit relatives, hug/show affection to the child, and put the child to bed. A scale reflecting the number of activities mothers engaged in each day of the week with their child was created and included in the analysis (alpha = .94).

### Statistical Analyses

The present analysis explored the role of parental incarceration in the sleep and dietary patterns of young children. The analysis proceeded as follows. First, we calculated and examined the descriptive statistics of the variables included in the analyses (eg, means, SDs). Next, we employed logistic regression techniques to assess the extent to which paternal, maternal, and combined parental incarceration increase the odds of poor sleep and dietary patterns across the following items: sleep problems, short sleep duration, salty snack consumption, starch consumption, sweets consumption, soda consumption, and fast food consumption. Ancillary analyses were also conducted to explore the increase in the predicted prob-