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# Race Matters in the Prosecution of Perpetrators of Inflicted Traumatic Brain Injury

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## What's Known on This Subject

Little is known regarding the charging and sentencing outcomes for child physical abuse. A meta-analysis of primarily child sexual abuse cases showed that child abuse is less likely to lead to filing of charges and incarceration than are other felonies.

## What This Study Adds

Pediatricians often do not know what happens in the legal system after a child abuse report. This study follows the case flow for 1 type of physical child abuse, inflicted traumatic brain injury.

## ABSTRACT

**OBJECTIVE.** The goal was to examine the case flow of child physical abuse prosecutions through the judicial system and to examine determinants of charges and sentencing decisions.

**METHODS.** This prospective cohort study monitored all defendants in identified cases of inflicted traumatic brain injury in North Carolina in 2000 and 2001. Victims were identified prospectively through surveillance at all PICUs in North Carolina and the Office of the Chief Medical Examiner. Suspected perpetrators were identified through information from families, hospital records, newspaper clippings, the Department of Corrections, and Clerks of Superior Court. Judicial case flow from original charges through sentencing was mapped. The victims' injury characteristics and suspects' characteristics, including potential mitigating and aggravating factors, were examined. Suspected perpetrator and victim characteristics were entered into multivariate models for examination of associations with charges and sentencing decisions.

**RESULTS.** Original and final charges varied widely. The most frequent original and final charge was the lowest-class felony child abuse charge. The child's death was predictive of higher felony charges. Sentences ranged from probation to life in prison. Of the defendants who were found to be guilty, 63% were incarcerated for some period of time. Severe sentences were associated with perpetrator race.

**CONCLUSIONS.** Prosecutors frequently charged the lowest felony child abuse charge available unless the child died. Minority status was not important in the decision to bring charges against a suspect but was the most important measured factor in rendering a sentence. Although the most appropriate charges and sentences can be argued, there seems to be a statewide bias toward harsher sentences for minority perpetrators. *Pediatrics* 2008;121:1174–1180

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### Key Words

child abuse, judicial decisions, disparity, race

### Abbreviations

CI—confidence interval  
DOC—Department of Corrections  
RR—relative risk  
TBI—traumatic brain injury  
OR—odds ratio

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**R**ECOGNIZING AND RESPONDING to child abuse involves medicine, law, and social policy. Whereas child maltreatment once was seen as a private problem within families, social norms and laws now recognize children's rights within society.<sup>1</sup> The Child Abuse Prevention and Treatment Act of 1974, which required states to develop mandated child abuse-reporting laws to receive federal funds, changed the relationships of the state, parents, and children.<sup>2</sup> Increases in reporting of child maltreatment and in state intervention into family life followed the implementation of child abuse-reporting laws. Although published research has explored some of the consequences of state intervention for the child victims,<sup>3,4</sup> little is known about the consequences of state intervention for suspected perpetrators of child physical abuse.

We undertook an examination of how the justice system treats suspected perpetrators of 1 specific form of child physical maltreatment, namely, inflicted traumatic brain injury (TBI). All suspected perpetrators for a population-derived sample of victims of inflicted TBI were tracked within the legal system in North Carolina, from the child's hospitalization for the diagnosis of physical abuse through the conclusion of each case. We paid special attention to areas open to prosecutorial and judicial discretion, including the original charges filed by the district attorney, the final charges filed against the defendant, and sentencing decisions. We hypothesized that mitigating and aggravating circumstances, in addition to defendant characteristics and the victim's injury severity or death, would be predictive of charges and sentencing decisions.

## METHODS

### Subject Ascertainment

#### *Identification of Victims*

Methods for identifying victims were described previously.<sup>5</sup> Briefly, all North Carolina-resident children <2 years of age who sustained a serious or fatal TBI that was evident on cranial computed tomographic scans or in pathologic evaluations and necessitated admission to an ICU during the period of January 1, 2000, to December 31, 2001, were identified. We also included all prehospital fatalities that were identified through the Office of the Chief Medical Examiner of the state of North Carolina. Whether the injury was inflicted was determined by each hospital child protection team or by the medical examiner. In cases of undetermined injury intent, a case summary that included details of the injury event related by the caregiver, results of medical tests, and the child's age was adjudicated as inflicted or noninflicted by 2 clinicians. This study was reviewed and approved by the institutional review board of the University of North Carolina at Chapel Hill.

#### *Identification of Suspected Perpetrators*

Suspected perpetrators were identified through a variety of mechanisms. In some cases, the perpetrator confessed to harming the child while the child was in the hospital, and the perpetrator's name was available in the medical chart. Some perpetrators' names were available from the Office of the Chief Medical Examiner after completion of the police investigation. A statewide newspaper search for the time period of the study using the key words "felony child abuse" was conducted. Newspaper articles were screened for date, county of occurrence, and other identifying information that matched the case, and then the identity of the perpetrator was coded. Finally, some families volunteered the suspected perpetrator's name and/or relationship to the child. Names provided by families were confirmed through the Department of Corrections (DOC) or the Clerks of Superior Court. In cases in which a perpetrator was not identified through these methods, the police or sheriff's department in the county in which the child was injured or killed was contacted. We attempted to identify anyone charged in the case by using both child data and incident date (all child abuse charges in the month of injury and child's year of birth, race, and gender). All suspected perpetrators were included in the initial case flow diagram; however, data on active duty military suspects, which were available from families but not available from the military justice system, and data on juveniles (<15 years of age), which were sealed by the courts, were excluded from the analyses of charges and sentencing.

### Legal and Judicial Outcomes

#### *Definitions*

Original charges represent the statement of the crime contained in the criminal complaint that the district attorney brought against the suspected perpetrator after he or she was identified. Final charges are the specific

crimes that the defendant either pled guilty or no contest to or was convicted of at trial.

Child abuse may be charged as a felony or a misdemeanor. A felony is a crime that is considered sufficiently serious to be punishable by death or a term in a state or federal prison. There is a hierarchy of felony types, with felony class A being considered the most serious and with decreasing seriousness (and suggested penalties) according to alphabetic order through class F. In North Carolina, prosecutors may bring specific felony child abuse charges against a defendant. Class C felony child abuse requires that a person intentionally commit assault on a child that results in any serious bodily injury or in permanent or protracted loss or impairment of any emotional or mental function. Class E felony child abuse charges differ in that they require "serious physical injury" except as noted for class C felony charges.<sup>6</sup> Misdemeanors are considered less-serious crimes and are punishable by confinement to a local jail and/or a fine. For analytic purposes, we defined felony classes A, B, and C as "high charges" and felony classes D, E, and F and misdemeanors as "low charges."

Defendants may plead no contest (the defendant does not dispute the charge) or guilty (the defendant admits that he or she committed the crime) or may proceed to a jury trial. A plea of no contest differs from an admission of guilt in that it allows the defendant to deny the act in a later civil suit. The district attorney may allow the defendant to plead guilty or no contest to a lesser crime than was originally charged. Sentencing decisions are rendered by a judge. Punishment may include a prison sentence, an intermediate sentence (probation with additional requirements such as day treatment), or a community sentence (fine, community service, or probation alone). North Carolina uses "presumptive sentencing guidelines." These guidelines make recommendations for minimal and maximal sentences for each class of felony or misdemeanor that judges may consider, along with any mitigating or aggravating circumstances, when coming to a decision about sentencing (North Carolina's sentencing guidelines are available at [www.nccourts.org/Courts/CRS/Councils/spac/Punishment.asp](http://www.nccourts.org/Courts/CRS/Councils/spac/Punishment.asp)).

For analytic purposes, we divided sentencing decisions into 2 categories, namely, severe and not severe. By examining the bimodal distribution of sentences, we classified severe sentences as >90 days of incarceration. The sentences classified as not severe included intermediate sentences, community sentences, and ≤90 days of incarceration. Perpetrators whose child abuse charges were dropped while other related charges (such as rape) were pursued were considered to have received a not-severe sentence for the child abuse charges.

#### *Identification of Outcomes*

We identified the legal and judicial outcomes in cases of inflicted TBI in this study from multiple sources. After a perpetrator's name was identified, public-access files were searched by using the North Carolina DOC database,<sup>7</sup> which contains information on all persons with criminal sentences in North Carolina. The DOC database contains the offense date, county of conviction, final

criminal charges, sentencing and incarceration information, and demographic information, including the race, gender, and date of birth of the perpetrator. We matched the offense date and county of conviction to the victim data to ensure that the correct perpetrator was identified in each case. Information on original charges, whether the defendant had a jury trial or pled guilty to the final charge, and sentencing decisions not in the DOC database was obtained from the Clerks of Superior Court in the county of occurrence.

### Predictive Factors

Child and defendant variables shown previously to affect the judicial process were recorded.<sup>8,9</sup> Child characteristics of interest included the child's age and insurance status, whether the child died, and whether the child sustained injuries in addition to the TBI.<sup>10</sup> Defendant characteristics of interest included whether the family had previous involvement with the Department of Social Services and the defendant's age, gender, relationship to the child (parent or not parent), race/ethnicity (non-Hispanic white versus minority) as defined by the DOC, and previous felony convictions. There were too few misdemeanor convictions among this group of defendants for analysis. Race was assessed in this study because it was shown in some studies to moderate charges and sentencing.<sup>9,11</sup> The court jurisdiction (urban versus rural) was analyzed because courts with larger child abuse case loads might have a special prosecutor for child abuse, which could affect the investigation and prosecution of a case.

### Statistical Analyses

Characteristics of the victims, including age, survival status, insurance status, and initial legal disposition for surviving victims, were examined by using frequencies and percentages. Characteristics of defendants, including demographic features, the defendant's relationship to the victim, rural versus urban county, initial and final charges, and sentencing information, are described as frequencies and percentages. Continuous variables are described by using medians with interquartile ranges.

A Pearson  $\chi^2$  analysis of predictor variables was performed for each outcome (initial charge, final charge, and severity of punishment). Relative risks (RRs) with 95% confidence intervals (CIs) were calculated. Multivariate models were constructed for original charges and severity of sentence. Covariates important to a 0.10 degree of significance in bivariate analyses were placed in the models. Covariates were kept in the model if they changed the model estimate by >10%. An interaction term for minority status and gender was included in the analysis of sentencing, to examine whether the race and gender of the perpetrator were intertwined in judicial decisions.

## RESULTS

Eighty victims were identified with the research criteria; 71 (89%) were <1 year of age.<sup>5</sup> Three cases were ruled undetermined by the Office of the Chief Medical Exam-

iner, and 2 cases were not substantiated by the Department of Social Services. Thirty percent of the victims had been battered in addition to their head injury, and 18 children (22.5%) died.<sup>5,10</sup> The majority of children who survived (58%) had custody retained by the state after discharge from the hospital, and 32 (51.2%) were placed in kinship or foster care. The majority of victims either qualified for public insurance (Medicaid or Carolina Access; 45.3%) or had no insurance (13.3%). An additional 14.6% of victims were covered by military insurance (all of the military parents were enlisted personnel), and 13.3% were covered by private insurance. The insurance status of the children who died before hospitalization (13.3%) was unavailable.

The case flow is shown in Fig 1. Of the 75 cases substantiated by child protective services, 54 (72%) had criminal charges filed, 18 (24%) did not have criminal charges filed, and no perpetrator could be identified through the DOC or the Clerks of Superior Court for 3 (4%). Three suspected perpetrators were active duty members of the military. One case involved a juvenile defendant.

Approximately one half (46.2%) of the 51 defendants (excluding 2 military cases and 1 juvenile case) with verified charges confessed, during the child's hospitalization, to injuring the child. Most defendants ( $n = 41$ ; 80%) pled guilty or no contest to the original charge or a lesser charge. All defendants initially received felony charges, and 8 (15.6%) were charged with >1 type of crime (Fig 2). The original charges filed were predominantly class E felony child abuse (56.8%), as were the final charges (47.9%). Ten defendants went to jury trial in civilian court, 3 of whom were found not guilty. Of the 48 perpetrators who were found to be guilty, 30 (63%) were incarcerated.

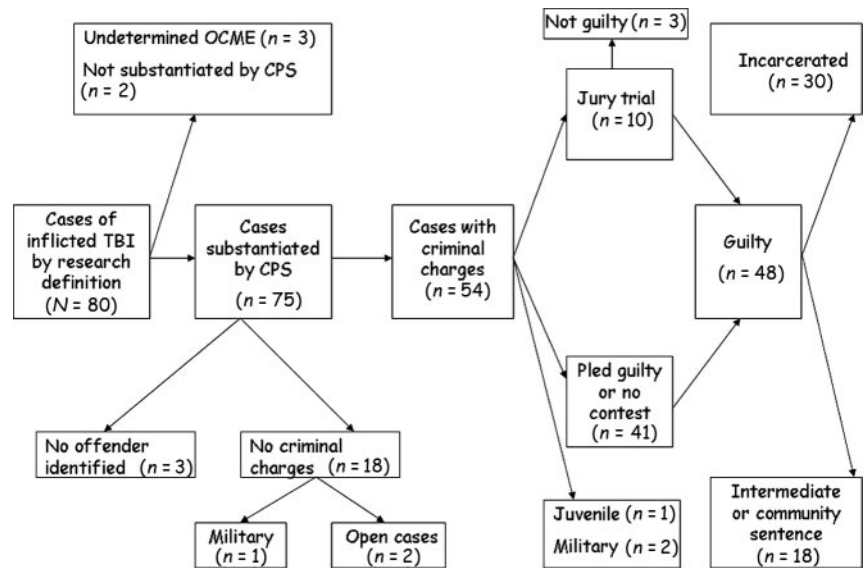
Defendants were predominantly male, related to the victim, and young (Table 1). Only 2 families had previous involvement with the Department of Social Services, and 7 defendants had previous felony convictions. Members of minorities (59.2%) were overrepresented as a proportion of the North Carolina population (31.7% in North Carolina are members of minorities).<sup>12</sup> Thirty percent of the cases with no charges involved nonminority families, compared with 40.8% of cases with criminal charges ( $P = .6$ ).

Thirty-four of the 100 counties in North Carolina were represented. The maximal number of cases in any 1 county was 6 cases, whereas most counties (74%) with any cases had only 1 case during the 2-year period. The county of jurisdiction was rural in 32 cases (59.3%) and military in 2 cases (3.7%), with the remaining charges filed in urban counties.

Initial charges ranged from premeditated murder (class A felony) through involuntary manslaughter (class F felony). Characteristics of defendants associated with high charges included the defendant's race/ethnicity, with members of minorities being more likely to receive high original charges (RR: 1.6; 95% CI: 1.0–2.5), and relationship to the child, with parents being less likely to receive high charges (RR: 0.5; 95% CI: 0.3–0.9) (Table 2). Defendant's age, gender, and number of pre-

FIGURE 1

Case flow analysis of 80 cases of inflicted TBI. OCME indicates Office of the Chief Medical Examiner; CPS, child protective services.



vious felony convictions and rural versus urban jurisdiction were not statistically associated with the type of charge. The sole child characteristic associated with high original charges was death (RR: 3.9; 95% CI: 2.1–7.0). In multivariate modeling, the child's death was the only covariate statistically associated with the severity of original charges, after adjustment for minority status and the defendant's relationship to the child.

Final charges were notable for their range (Fig 2). In cases involving children who died, perpetrators were charged with premeditated murder (class A felony) through involuntary manslaughter (class F felony). In cases involving children who survived their injuries, final charges ranged from class C felony child abuse through misdemeanor child abuse. No perpetrator characteristics were associated with the final charges. Death of the child was associated with high charges (RR: 7.5; 95% CI: 1.7–33.7), although precision was poor because of small numbers.

Sentencing outcomes ranged from community sentences to incarceration. In homicide cases, sentences ranged from life in prison for 2 perpetrators to probation for 1. In bivariate analyses, receipt of a severe sentence was associated most strongly with minority status of the perpetrator (RR: 1.9; 95% CI: 1.0–3.7), death of the child (RR: 1.6; 95% CI: 1.0–2.6), and previous felony

convictions (RR: 1.8; 95% CI: 1.1–2.7) (Table 3). In the multivariate model, only minority status (odds ratio [OR]: 3.8; 95% CI: 1.1–13.3) was associated independently with sentencing, after adjustment for previous felony convictions. Child death did not change the model estimate by >10%. This OR was similar to the unadjusted OR for a minority perpetrator to receive a severe sentence (OR: 3.9; 95% CI: 1.0–16.0). The interaction term for minority status and gender did not contribute to the model.

## DISCUSSION

We found heterogeneous charges and sentencing decisions in a population-based sample of 51 cases of inflicted TBI in North Carolina. The range of sentences spanned probation to life imprisonment. Although the severity of charges (both initial and final) brought against defendants could be explained largely by whether the child died, nonwhite perpetrator race was most explanatory of final sentencing decisions.

Defendants most often were charged initially with the lowest-class felony child abuse statute (felony class E) and pled guilty to the original charge. Class C felony child abuse charges were rarely used; therefore, the permanent nature of the injuries<sup>13,14</sup> seems to be underappreciated by prosecutors. Defendants in cases in which

| Original charge (N=51)          |    |      | Legal proceedings (N=51)         |    |      | Final charges (N=48)            |    |      |
|---------------------------------|----|------|----------------------------------|----|------|---------------------------------|----|------|
|                                 | N  | %    |                                  | N  | %    |                                 | N  | %    |
| Murder                          |    |      | Guilty plea to original charge*  | 24 | 47.1 | Murder                          |    |      |
| 1st degree (A)†                 | 8  | 15.7 | Guilty plea lesser charge        | 9  | 17.6 | 1st degree (A) †                | 2  | 4.1  |
| 2nd degree (B)                  | 5  | 9.8  | No contest plea original charge* | 4  | 7.8  | 2nd degree (B)                  | 3  | 6.3  |
| Assault (intent to kill) (C)    | 5  | 9.8  | No contest lesser charge         | 3  | 5.9  | Child abuse, bodily injury (C)  | 2  | 4.1  |
| Child abuse, bodily injury (C)  | 3  | 5.9  | Found guilty original charge*    | 6  | 11.7 | Voluntary manslaughter (D)      | 1  | 2.1  |
| Child abuse, serious injury (E) | 29 | 56.8 | Found guilty lesser charge       | 1  | 2.0  | Child abuse, serious injury (E) | 23 | 47.9 |
| Involuntary manslaughter (F)    | 1  | 2.0  | Child abuse charges consolidated | 1  | 2.0  | Assault inflicting injury (E)   | 3  | 6.3  |
|                                 |    |      | Not guilty                       | 3  | 5.9  | Involuntary manslaughter (F)    | 7  | 14.6 |
|                                 |    |      |                                  |    |      | Misdemeanor child abuse         | 7  | 14.6 |

\*Includes guilty of primary charge with other charges reduced or dismissed

FIGURE 2

Original charges, legal proceedings, and final charges in 51 cases of inflicted TBI. † Includes guilty of primary charge with other charges reduced or dismissed; ‡ felony classification.

**TABLE 1** Characteristics of Defendants in Cases of Inflicted TBI  
(N = 54)

| Defendant Characteristics            |                |
|--------------------------------------|----------------|
| Gender, n (%)                        |                |
| Male                                 | 38 (70.4)      |
| Female                               | 15 (27.8)      |
| Missing <sup>a</sup>                 | 1 (1.9)        |
| Race/ethnicity, n (%) <sup>b</sup>   |                |
| White                                | 22 (40.8)      |
| Black                                | 24 (44.4)      |
| Native American                      | 2 (3.7)        |
| White, Hispanic                      | 3 (5.6)        |
| Other                                | 1 (1.9)        |
| Missing <sup>a,c</sup>               | 2 (3.8)        |
| Relationship to victim, n (%)        |                |
| Father                               | 28 (51.9)      |
| Mother                               | 8 (14.8)       |
| Babysitter                           | 6 (11.1)       |
| Mother's boyfriend                   | 6 (11.1)       |
| Stepfather                           | 2 (3.7)        |
| Grandparent                          | 2 (3.7)        |
| Family friend                        | 1 (1.9)        |
| Juvenile                             | 1 (1.9)        |
| Previous felony conviction, n (%)    |                |
| None                                 | 47 (87.0)      |
| ≥1                                   | 7 (13.0)       |
| Age, median (interquartile range), y | 22.5 (21–22.5) |

<sup>a</sup> Military defendant.

<sup>b</sup> Nonwhite was considered minority.

<sup>c</sup> Juvenile defendant.

the child died were more likely to be charged initially with higher-class felony crimes, compared with cases in which the child survived. Final charges were notable for their variability. Among defendants charged with causing a child's death, charges ranged from premeditated murder through involuntary manslaughter. Among perpetrators of inflicted TBI that the child survived, charges ranged from felony child abuse to a misdemeanor offense.

The case flow for inflicted TBI in this study was similar to that found in a meta-analysis of 21 studies of other child abuse prosecutions by Cross et al.<sup>15</sup> The majority (90%) of the studies in that meta-analysis concerned only child sexual abuse, with the remainder involving mixed physical and sexual abuse. Child sexual abuse cases differ systematically from inflicted TBI cases because the prosecutor must weigh the potential trauma to the older child victim of testifying in a sexual abuse case, compared with cases in which almost all of the victims are infants. Physical evidence frequently is not found in sexual abuse cases.<sup>16</sup>

The meta-analysis found that the rates of charging were variable (28%–94%) but, once charges had been brought, cases were carried forward at rates of ≥72%.<sup>15</sup> Remarkably similarly, our study found that, of the 75 substantiated cases, 54 (72%) were charged and carried forward. Also, like the study by Cross et al,<sup>15</sup> our study revealed a high rate of guilty or no contest pleas (80%) and a very high rate of convictions (94%). This high conviction rate suggested that prosecutors chose cases to

charge partially on the basis of the probability of obtaining a conviction. There did not seem to be a racial bias in which cases were brought forward for criminal charges.

We found minority status to be the most predictive identified factor in sentencing decisions. Although the heterogeneity of initial and final charges could be understood in terms of the severity of the crime (child's death), this did not hold true for sentencing decisions. Penalties for this single form of child physical abuse varied widely even when only sentences for a conviction of causing the child's death were examined, with some perpetrators receiving sentences of life in prison and others receiving probation. We examined potential mitigating and aggravating factors that might influence judicial discretion within the sentencing guidelines; however, none of those factors was associated with the severity of the sentence.

Although there are no comparable studies addressing only child physical abuse and sentencing with which to compare these results, other studies of race and the criminal justice system have been performed, with mixed results.<sup>9,11</sup> A study of the death penalty in North Carolina showed that, as in our study, minority status was associated with the initial charges and was a factor in the penalty phase of the proceedings.<sup>17</sup> After adjusting for multiple factors that affect sentencing in the death penalty, the authors found that nonwhite defendants were twice as likely to receive the death sentence as white defendants. Studies of other crimes, including possession of cocaine and burglary, have not excluded systematic racial bias in sentencing decisions.<sup>9</sup>

Unlike the study of the death penalty, which encompassed many different types of capital crimes with aggravating factors, we concentrated on 1 specific form of child abuse, which we thought would reduce the variability in the range of charges and sentences imposed. The variability shown in this study probably was not attributable to the families' economic ability to hire legal counsel or to post bail, because most perpetrators were family members and most families, as indicated by their insurance status, were poor.

This study has a number of limitations. Although it represents 2 full years of cases of inflicted TBI in North Carolina, the numbers are small. It is possible that there were aggravating factors for the minority perpetrators that caused them to be more likely to be imprisoned or to have more-severe sentences that we did not measure. We do not know the prosecutors' or the judges' reasoning in each case. Judges may have differing views of sentencing (retribution versus rehabilitation). We also do not know about process factors such as caseloads in each jurisdiction. However, the cases were from multiple jurisdictions, and the philosophy of no single prosecutor or judge weighted the results in either direction.

Despite these limitations, this study is unique in following a large number of child physical abuse cases through the legal system, concentrating on points of discretion within the justice system. A range of original charges against defendants were sought by district attorneys, but the differences in the severity of charges seemed to be attributable largely to whether the child

**TABLE 2 Association of High Versus Low Original and Final Charges With Defendant and Victim Characteristics**

| Characteristic        | Original Charge (N = 51) |            |               | Final Charge (N = 48) |            |                |
|-----------------------|--------------------------|------------|---------------|-----------------------|------------|----------------|
|                       | High, n (%)              | Low, n (%) | RR (95% CI)   | High, n (%)           | Low, n (%) | RR (95% CI)    |
| Defendant age         |                          |            |               |                       |            |                |
| ≤21 y                 | 4 (19.0)                 | 11 (36.7)  | 0.6 (0.2–1.5) | 0 (0)                 | 14 (34.1)  | 0.4 (0.06–2.7) |
| >21 y                 | 17 (81.9)                | 18 (63.3)  |               | 7 (100.0)             | 27 (65.9)  |                |
| Defendant gender      |                          |            |               |                       |            |                |
| Male                  | 15 (71.4)                | 21 (70.0)  | 0.5 (0.3–0.9) | 5 (71.4)              | 29 (70.7)  | 1.0 (0.2–4.7)  |
| Female                | 6 (28.6)                 | 9 (30.0)   |               | 2 (28.6)              | 12 (29.3)  |                |
| Defendant race        |                          |            |               |                       |            |                |
| Nonwhite              | 16 (76.2)                | 14 (53.3)  | 1.6 (1.0–2.5) | 5 (71.4)              | 23 (56.1)  | 1.8 (0.4–8.3)  |
| White                 | 5 (23.8)                 | 16 (46.7)  |               | 2 (28.6)              | 18 (43.9)  |                |
| Relationship to child |                          |            |               |                       |            |                |
| Parent                | 11 (52.4)                | 24 (80.0)  | 0.5 (0.3–0.9) | 3 (42.9)              | 31 (73.8)  | 0.3 (0.1–1.2)  |
| Nonparent             | 10 (47.6)                | 6 (20.0)   |               | 4 (57.1)              | 10 (26.2)  |                |
| Previous felony       |                          |            |               |                       |            |                |
| Yes                   | 2 (10.0)                 | 5 (17.2)   | 0.7 (0.2–2.3) | 0 (0)                 | 7 (17.1)   | 0.7 (0.1–5.0)  |
| No                    | 18 (90.0)                | 24 (82.8)  |               | 7 (100.0)             | 34 (82.9)  |                |
| Jurisdiction          |                          |            |               |                       |            |                |
| Rural                 | 12 (57.1)                | 20 (66.7)  | 0.8 (0.4–1.5) | 3 (42.9)              | 26 (63.4)  | 0.5 (0.1–1.9)  |
| Urban                 | 9 (42.9)                 | 10 (33.3)  |               | 4 (57.1)              | 15 (36.6)  |                |
| Child battered        |                          |            |               |                       |            |                |
| Yes                   | 6 (28.6)                 | 7 (23.3)   | 1.1 (0.6–2.4) | 2 (28.6)              | 10 (24.4)  | 1.2 (0.3–5.4)  |
| No                    | 15 (71.4)                | 23 (76.7)  |               | 5 (71.4)              | 31 (75.6)  |                |
| Child died            |                          |            |               |                       |            |                |
| Yes                   | 12 (57.1)                | 1 (3.3)    | 3.9 (2.1–7.0) | 5 (71.4)              | 7 (17.1)   | 7.5 (1.7–33.7) |
| No                    | 9 (42.9)                 | 29 (96.7)  |               | 2 (28.6)              | 34 (82.9)  |                |

died. At the second point of discretion, that is, final charges, there was even more diversity; however, the class of felony charged seemed to be driven primarily by

the cases in which the child died. At the final point of discretion, that is, sentencing, the child's death was less significant in determining the severity of sentencing. Instead, the perpetrator's minority status best predicted sentencing decisions, even after adjustment for potential aggravating and mitigating factors. Although reasonable arguments can be made about whether the goal of sentencing should be retribution or rehabilitation, it is difficult to argue that sentencing decisions should be biased by the perpetrator's race.

**TABLE 3 Perpetrator and Victim Characteristics Associated With a Severe Sentence (N = 48)**

| Characteristic     | n (%)     |            | RR (95% CI)   |
|--------------------|-----------|------------|---------------|
|                    | Severe    | Not Severe |               |
| Perpetrator age    |           |            |               |
| ≤21 y              | 7 (26.9)  | 7 (31.8)   | 0.9 (0.5–1.6) |
| >21 y              | 19 (73.1) | 16 (68.2)  |               |
| Perpetrator gender |           |            |               |
| Male               | 21 (80.8) | 13 (59.1)  | 1.7 (0.8–3.7) |
| Female             | 5 (19.2)  | 9 (40.9)   |               |
| Perpetrator race   |           |            |               |
| Nonwhite           | 19 (73.1) | 9 (40.9)   | 1.9 (1.0–3.7) |
| White              | 7 (26.9)  | 13 (59.1)  |               |
| Relationship       |           |            |               |
| Parent             | 16 (61.5) | 18 (81.8)  | 0.7 (0.4–1.1) |
| Nonparent          | 10 (38.5) | 4 (18.2)   |               |
| Previous felony    |           |            |               |
| Yes                | 6 (23.1)  | 1 (4.5)    | 1.8 (1.1–2.7) |
| No                 | 20 (76.9) | 21 (95.5)  |               |
| Jurisdiction       |           |            |               |
| Rural              | 14 (53.8) | 15 (68.2)  | 0.8 (0.5–1.3) |
| Urban              | 12 (46.2) | 7 (31.8)   |               |
| Child battered     |           |            |               |
| Yes                | 6 (23.1)  | 6 (27.3)   | 0.9 (0.5–1.7) |
| No                 | 20 (76.9) | 16 (72.7)  |               |
| Child died         |           |            |               |
| Yes                | 9 (34.6)  | 3 (13.6)   | 1.6 (1.0–2.6) |
| No                 | 17 (65.4) | 19 (86.4)  |               |

A severe sentence was >90 days of incarceration.

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#### REFERENCES

- Mason MA. *From Father's Property to Children's Rights: The History of Child Custody in the United States*. New York, NY: Columbia University Press; 1994
- Child Abuse Prevention and Treatment Act. 42 USC (no A) § 5101–5106 (1974)
- Runyan DK, Everson MD, Edelsohn GA, Hunter WM, Coulter ML. Impact of legal intervention on sexually abused children. *J Pediatr*. 1988;113(4):647–653
- Barth R, Biemer P, Runyan D, et al. Methodological lessons from the National Survey of Child and Adolescent Well-Being: the first 3 years of the USA's first national probability study of children and families investigated for abuse and neglect. *Child Youth Serv Rev*. 2002;24(6–7):513–541
- Keenan HT, Runyan DK, Marshall SW, Nocera MA, Merten

- DF, Sinal SH. A population-based study of inflicted traumatic brain injury in young children. *JAMA*. 2003;290(5):621–626
6. North Carolina General Statutes: section 14–318.4: child abuse a felony. Available at: [www.ncga.state.nc.us/enactedlegislation/statutes/pdf/bysection/chapter\\_14/gs\\_14-318.4.pdf](http://www.ncga.state.nc.us/enactedlegislation/statutes/pdf/bysection/chapter_14/gs_14-318.4.pdf). Accessed February 5, 2007
  7. North Carolina Department of Corrections. Home page. Available at: [www.doc.state.nc.us/offenders](http://www.doc.state.nc.us/offenders). Accessed January 2006
  8. Cross TP, De Vos E, Whitcomb D. Prosecution of child sexual abuse: which cases are accepted? *Child Abuse Negl*. 1994;18(8):663–677
  9. Bourassa S, Andreescu V. *Racial Fairness in Sentencing: A Case Study of Selected Crimes in Jefferson County*. Louisville, KY: Urban Studies Institute, University of Louisville; 2004
  10. Keenan HT, Runyan DK, Marshall SW, Nocera MA, Merten DF. A population-based comparison of clinical and outcome characteristics of young children with serious inflicted and noninflicted traumatic brain injury. *Pediatrics*. 2004;114(3):633–639
  11. Dixon J. The organizational context of criminal sentencing. *Am J Sociol*. 1995;100(5):1157–1198
  12. US Census Bureau. State and county quickfacts: North Carolina. Available at: <http://quickfacts.census.gov/qfd/states/37000.html>. Accessed February 26, 2007
  13. Barlow KM, Thomson E, Johnson D, Minns RA. Late neurologic and cognitive sequelae of inflicted traumatic brain injury in infancy. *Pediatrics*. 2005;116(2). Available at: [www.pediatrics.org/cgi/content/full/116/2/e174](http://www.pediatrics.org/cgi/content/full/116/2/e174)
  14. Keenan HT, Hooper SR, Wetherington CE, Nocera M, Runyan DK. Neurodevelopmental consequences of early traumatic brain injury in 3-year-old children. *Pediatrics*. 2007;119(3). Available at: [www.pediatrics.org/cgi/content/full/119/3/e616](http://www.pediatrics.org/cgi/content/full/119/3/e616)
  15. Cross TP, Walsh WA, Simone M, Jones LM. Prosecution of child abuse: a meta-analysis of rates of criminal justice decisions. *Trauma Violence Abuse*. 2003;4(4):323–340
  16. Heger A, Ticson L, Velasquez O, Bernier R. Children referred for possible sexual abuse: medical findings in 2384 children. *Child Abuse Negl*. 2002;26(6–7):645–659
  17. Unah I, Boger J. *Race and the Death Penalty in North Carolina: An Empirical Analysis: 1993–1997*. Durham, NC: Common Sense Foundation; 2001. Available at: [www.common-sense.org/pdfs/NCDeathPenaltyReport2001.pdf](http://www.common-sense.org/pdfs/NCDeathPenaltyReport2001.pdf). Accessed April 14, 2008

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## RESEARCHERS FIND HUGE VARIATIONS IN END-OF-LIFE TREATMENT

“Washington—New research shows huge, unexplained variations in the amount, intensity and cost of care provided to Medicare patients with chronic illnesses at the nation’s top academic medical centers, raising the possibility that the government could save large amounts of money. In a report being issued on Monday, Dartmouth researchers say that total Medicare spending in the last two years of life ranges from an average of \$93,842 for patients who receive most of their care at UCLA Medical Center to \$53,432 at the Mayo Clinic’s main teaching hospital in Rochester, MN. Other top-ranked hospitals fell in between. Medicare spending averaged \$85,729 for those who used Johns Hopkins Hospital in Baltimore, \$78,666 at Massachusetts General and \$55,333 at the Cleveland Clinic. Differences in the last six months of life were even more striking. Medicare spent an average of \$52,911 for UCLA patients and \$28,763 for those who used the Mayo hospital, St Marys. Dr John E. Wennberg of Dartmouth Medical School, the chief author of the study, said doctors and hospitals that provided more care, or more intensive care, did not necessarily achieve better results for patients. ‘Some chronically ill and dying Americans are receiving too much care—more than they and their families actually want or benefit from,’ Dr Wennberg said.”

Peer R. *New York Times*. April 7, 2008

Noted by JFL, MD



## Race Matters in the Prosecution of Perpetrators of Inflicted Traumatic Brain Injury

Heather T. Keenan, Maryalice Nocera and Desmond K. Runyan

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