Journal Highlights

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Anonymity and Disclosure of Child Maltreatment

Child maltreatment is a highly stigmatized behavior. Researching this behavior is therefore difficult, and investigators must use imperfect, insensitive methods. Child welfare reports are specific but insensitive in that most cases of maltreatment do not get reported. Risk factors in parents or caregivers (mental illness, physical punishment, substance abuse, domestic violence) may be underreported and may not be firmly associated with maltreatment. Professionals can obtain parental reports of maltreatment by self-report instruments such as the Conflict Tactics Scale—Parent-Child (CTS-PC), which explores physical abuse, psychological abuse, and neglect. Again, the stigma and potential consequences of these disclosures (including Child Protective Services [CPS] reports) may make for underendorsing.

Most child maltreatment (CM) research therefore is done under conditions of confidentiality. Investigators agree not to share the subjects' answers unless there is possible danger to participants or their children, and they pledge to keep information collected separate from identifying data, except for a table kept in a locked drawer. This degree of confidentiality is often not considered very reassuring or protective by study participants.

The study authors sought to determine, by randomly assigning three different degrees of anonymity promised to study participants, the extent of disclosure of CM and CM-risk behaviors. Three degrees of protection of participants were possible in this study: (1) Anonymity, in which the researcher did not know or record participants' names, and in which their answers could not be traced to them in any fashion, (2) Quasi Anonymity, in which participants' names were recorded, but could not be connected to their answers, and (3) the Traditional Confidential Consent form, in which answers could be connected to names only via a table kept in a locked file cabinet. Participants were told in this condition that Institutional Review Board requirements made the researchers potential reporters of information about CM. The researchers in this study attempted to discern any explanation for potentially different patterns of disclosure as a function of the three protection conditions offered to participants.

Study subjects were 150 women in an obstetric hospital who had recently given birth. They were at least 18 years old and had at least one other child. Most were African American. The postpartum period was chosen because it is a period in which women may be reluctant to reveal CM and CM risk factors. Study subjects had to understand English, not be in pain at the time of study participation, and have slept since delivery. Each mother's and her child's medical condition had to be stable. Informed consent was obtained.

Researchers obtained three data sets: (1) Five items from the CTS-PC were used to inquire about stigmatized or harsh acts toward children: swearing or cursing at a child, slapping a child, pinching a child, shaking a child, calling the child dumb or lazy; (2) the Child Abuse Potential Inventory (CAPI) was used to look for risk factors for CM: rigidity, emotional distress, and social isolation—the authors called these "indirect items"; and (3) previous involvement with CPS was sought by questioning participants. This included CPS investigation (even for a false report) as well as removal of a child from parental custody for any time period.

After data collection, the women were informed that in reality the entire study was anonymous (for all three protection conditions) and that the random assignment to the three conditions was a needed fiction to see how self-reporting varied under various conditions of anonymity. None of the participants was "troubled by the deception."

Women in all three protection conditions were similar regarding race, age, education, number of children, and marital and financial status. There were significant differences between protection conditions and disclosures. Endorsement of harsh parenting behaviors (on the CTS-PC) was 2.7 times higher under complete anonymity versus traditional confidentiality and 2 times higher in the quasi anonymous condition. Risk factors (the CAPI responses) were endorsed 1.8 times more in the anonymous condition than traditional confidentiality, and 1.9 times more in the quasi anonymous condition. CPS involvement was endorsed 3 times more frequently in the anonymous condition than in the traditional confidentiality condition. The quasi anonymous condition degree of disclosures generally fell between those of anonymity and traditional confidentiality.

Thus, it was clear that disclosure increases when participants do not think that they could be connected to their responses, with full anonymity leading to much more disclosure than traditional confidentiality. The authors point out that the data from fully anonymous participants could not be used for longitudinal research, that is, on follow-up studies of such women since they are not identifiable. They suggest that the quasi anonymous approach to data collection might produce data that could be linked by nonidentifying personal cues (such as the first initial of a parent's first name

or "a favorite flavor of ice cream") to a participant and used in follow-up studies without revealing identities.

Chase, S. K., Beatty, J. R., & Ondersma, S. J. (2011). A randomized trial of the effects of anonymity and quasi anonymity on disclosure of child maltreatment-related outcomes among postpartum women. *Child Maltreatment, 16*(1), 33–40.

Change Trajectories During Home-Based Services

As reported physical and sexual abuse declines, chronic child neglect comprises a larger proportion of cases in the child welfare system. Families with neglect are more likely to have multiple substantiated cases with multiple service episodes, potentially receiving the same services repeatedly and using increasing resources in the community over time. It is important to understand patterns of repeated maltreatment over time so we can better understand which services have the potential for the greatest improvements and whether different "change trajectories" in families require different interventions at different points during their involvement with child welfare services.

The authors studied 2,175 families receiving home-based family preservation and support services provided by community-based agencies in six districts across one state. Families were referred for these services by child welfare authorities because of physical abuse or neglect, with specific exclusion of sexual abuse. The authors then tested hypotheses about five basic change trajectories: (1) "untreatable families," who have substantial and intractable problems that respond little to services, (2) "relapsing families," who improve during services but lose or fail to sustain improvement over time, (3) "paradoxical" patterns, in which families get worse over the course of child welfare services, sometimes with improvement only after the withdrawal of services, (4) "probabilistic" patterns, for which high-problem families have a modest but stable probability of improving during any given service episode and might require multiple episodes to eventually improve in a dose-dependent manner, and (5) other change trajectories.

Audio computer assisted self-interview was used for families around service entry, the end of services (means 205 days later), and again 6 months later (means 405 days from entry). The population was thought to be representative demographically of service participants across the state, 72% of families who were approached for the study enrolled, and approximately one third completed all three phases of data collection. Four constructs associated with maltreatment were measured to assess change over time: depression (Beck Depression Inventory), concrete resources (Family Resources Scale), social support (Social Provisions Scale), and abuse risk (Child Abuse Potential Inventory). A discrete-time recurrent event survival model was used to test child welfare recidivism patterns over 3 years.

When applied to latent problem factor scores, the five change trajectories hypothesized essentially duplicated the trajectory patterns that emerged, although there were important but variable effects from missing data. Data from independently collected home visitor reports and clinician ratings also confirmed these trajectory assignments. Recidivism rates also followed predicted patterns based on change trajectory, with some important limitations. The most strongly supported prediction was the idea that chronic cases enter services with high problem levels and often show limited and insufficient improvement during services. As the number of reports increased, families were also more likely to be in "stable high" rather than "stable low" patterns. Little support was found for the hypotheses that families actually worsen over the course of services or relapse, with few families having relapsing or paradoxical trajectories identified.

The study's findings raise a number of questions about the child welfare service system structure. Traditional reactive and episodic service models may be a "mismatch" for families with change trajectories that are better suited to chronic care services. Chronic care service models appear better adapted to the needs of "untreatable families" or for probabilistic and relapsing change trajectories. Many high-problem chronic cases in child welfare show limited but important sustained change with current services that can be associated with decreased recidivism risk, and while current reactive periodic services efforts are not wasted on chronic families, their change trajectories suggest that chronic care models are potentially a better fit with better long-term outcomes.

Chaffin, M., Bart, D., Hecht, D., & Silosvky, J. (2011). Change trajectories during home-based services with chronic child welfare cases. *Child Maltreatment, 16*(2), 114–125.

Investigations Involving Parents With Cognitive Impairments

Parents with cognitive impairments (CI) make up between 2.5% and 5.4% of the population. They are overrepresented in child welfare cases, and many of their children are removed from parental care. More than 10% of all cases investigated for child maltreatment (CM) in Canada involve parents with CI. In these cases, there is greater likelihood of CM substantiation, a greater chance of a case staying open for protective services (PS) even if it is not substantiated, and a greater chance of a child being removed. Studies show that when parents have CI, more than 27% of children are removed. Studies in the United States, Australia, and England have shown that children of CI parents are nearly 4 times more likely to be removed from the home. Parents with CI may be automatically presumed to be incompetent, and PS systems may not be constructed to support such parents. Little research has been done on the factors that influence PS decision-making in cases that involve parents with CI.

The authors studied the relationship between CM investigation outcomes (substantiation, case kept open, child removal) for children of parents with CI and child, case, parent, household, and PS worker variables. They used data taken from the Canadian Incidence Study of Reported Child Abuse and Neglect (CIS-2003), a database consisting of CM investigations across Canada. They randomly selected 55 child welfare service areas from the total of 382 such areas, and they excluded cases involving children >15 years old. The sample contained 1,170 investigations of children of parents with CI. Parents were considered to have CI based on PS worker judgment, whether or not psychometric testing results were available. The independent variables were (1) child characteristics: age, problems in functioning (physical, cognitive, emotional, and behavioral), (2) case characteristics: maltreatment type, severity, and chronicity, (3) parent and household characteristics: number of parents in the home, parental education, employment, income, housing type, history of maltreatment as a child, social supports, mental health, substance abuse, and perceived noncooperation, and (4) characteristics of the investigating PS worker: years in the field and current caseload.

Three fourths of cases involved a mother with CI. Mean age of the child was 7 years. Most referrals to PS were from schools (22%), police (16%), and health professionals (10%). Neglect was the most common form of CM. Allegations of sexual abuse were rare. One third of the children had had previous substantiated CM investigations. Investigating PS workers had an average of 7 years (SD=7.22) experience. They had an average caseload of about 15 (SD=10.88). CM type and severity were the strongest predictors of substantiation. The chance of substantiation increased threefold when exposure to domestic violence was present. The likelihood of substantiation decreased with increasing investigator caseload.

Of the 715 cases for which CM was substantiated, 70% were kept open for ongoing services. When a parent had been maltreated as a child, the chance that their child's case would remain open was increased fourfold. Of cases that were not substantiated, 30% were kept open for ongoing PS involvement. These cases were more likely to remain open for younger children, children with problems functioning, and when the parent was unemployed, using substances, or socially isolated. Less experienced PS workers were more likely to keep unsubstantiated cases open. Nearly 10% of cases of substantiated CM by parents with CI resulted in removal (or "court application" in Canadian terminology). Perceived parental noncooperation was strongly associated with removal as was the severity of the CM.

The perception of parental noncooperation, according to the authors, derives from the fact that parents with CI may be unreliable timekeepers, make more than one appointment for the same time slot, and make spur-of-the-moment decisions. PS workers interpret missed appointments as noncooperation. They may not have the time or skills to develop rapport with CI parents. Such parents may agree to comply with PS suggestions without fully understanding what has been asked. When they don't follow through, they are considered noncooperative. PS workers made few referrals for services to relieve parental poverty, despite the well-known association between poverty and the risk of neglect. Some PS decisions regarding parents with CI were related to investigator experience and caseload and not within parents' control.

Limitations of the study included the fact that the level of parental CI was not ascertained. This may be important, as parenting ability is known to be very poor with an IQ <60. In addition, the study data looked at case characteristics and outcomes for a single point in time, and long-term outcomes were not examined. The authors call for increased training for PS workers in helping parents with CI to increase worker comfort and reduce possible worker biases and misconceptions.

McConnell, D., Feldman, M., Aunos, M., & Prasad, M. (2011). Child maltreatment investigations involving parents with cognitive impairments in Canada. *Child Maltreatment, 16*(1), 21–32.

Abusive Versus Noninflicted Abdominal Trauma

Abusive head trauma is the leading cause of child abuse death, followed by abusive abdominal trauma (AAT). Previous outcome studies of AAT used data from single hospitals or trauma centers. This study looked at children hospitalized for abdominal trauma at all types of acute care hospitals in the United States using a national database.

The Kids' Inpatient Database (KID) is a database of inpatient hospital stays developed by the U.S. Agency for Healthcare Research and Quality. Datasets, released every 3 years, contain a

sample of 80% of all acute care hospitalizations, with three million hospitalizations in 36 states. Because the majority of abusive injuries are found in young children, the authors analyzed only children 0–9 years old. The 2003 and 2006 databases —the most recent available—were combined for this study. Outcomes studied were mortality, length of hospital stay, and total hospital charges incurred. Confounders and covariates included in the analysis were child's age, gender, race/ethnicity, payer type, urban or rural residence, and income quartile of residence by zip code. Injury severity was also considered.

The combined database had 234 children with AAT and 4,200 with noninflicted abdominal injury. Children with AAT were younger than those with accidental injury (mean age of 2 years versus 5.4 years) ($p<.01$), more likely to be in a minority group, and more likely to live in a zip code with the lowest median income ($p<.01$ for both). The percentage of boys was similar for both groups. The mortality rate for children with AAT was 9% versus 3.4% for noninflicted abdominal injury ($p<.01$). Length of hospital stay was 6 days versus 4 days for noninflicted injury ($p<.01$). The mortality rate among infants (0–1 year) was not significantly different for abusive versus noninflicted abdominal injuries.

This study is the first to provide data on children hospitalized with abdominal injuries at a group of acute care hospitals and not just at trauma centers. Children were included who did not have injuries severe enough to justify trauma center admission, and a large sample size was used. The authors have confirmed the impression of many of us in the field that children with AAT have worse outcomes than those with noninflicted abdominal injuries.

Lane, W. G., Lotwin, I., Dubowitz, H., Langenberg, P., & Dischinger, P. (2011). Outcomes for children hospitalized with abusive versus noninflicted abdominal trauma. *Pediatrics, 127*(5), e1400–e1405.

Vitamin D Status in Abused and Nonabused Children

It has been proposed that suboptimal vitamin D levels can account for bone fractures in children in whom there is no other explanation for the fracture(s). That is, low vitamin D levels are an alternative explanation to inflicted injuries causing fractures. If this is so, abusive injury may be misdiagnosed. Severe vitamin D deficiency is associated with clinical rickets (a bone disease with bone deformity and fragility), but no studies have shown that vitamin D insufficiency—in the absence of rickets—leads to increased fracture susceptibility. The authors evaluated children younger than 2 years of age with fractures to compare vitamin D status (1) between children with accidental and abusive fractures, (2) between children with single and multiple fractures, and (3) among children with metaphyseal (growing end of a bone) and rib fractures, which are highly specific for abuse.

The investigators studied 118 children admitted to a children's hospital with fractures over a 1-year period. Patients were excluded from the study if they had a known pre-existing disease that predisposed them to fractures or if they were taking medications that affected bone metabolism. A diagnosis of abuse was made using history, physical examination, laboratory and radiologic findings, as well as consultation with child abuse experts based on published American Academy of Pediatrics guidelines. Serum vitamin D levels were classified as either vitamin D deficient (<20 ng/ml), vitamin D insufficient (20 - <30 ng/ml), or vitamin D sufficient (at least 30 ng/ml). Eight percent of the study population was vitamin D deficient, 31% vitamin D insufficient, and 61% vitamin D sufficient, levels very similar to the distribution of vitamin D levels found in another study of healthy 8–24-month-old children without fractures. None of the children in the present study had radiographic evidence of rickets. Some had evidence of demineralization (5% of the vitamin D-insufficient group, 7% of the vitamin D-sufficient group). This was not a statistically significant difference.

Accidental injuries as the cause of fractures was diagnosed in 60% of the children, abuse in 31%, and cause not determined in 9%. The prevalence of vitamin D deficiency and insufficiency did not differ between abused and nonabused children with fractures. Vitamin D status did not differ between children with single or multiple fractures. In addition, vitamin D status did not differ between children with rib or metaphyseal fractures and those without these lesions. The authors note that they did not have a control group of children without fractures but state that the study already mentioned (of vitamin D levels in healthy children) supports the correctness of their findings of the distribution of vitamin D levels in their population. They also indicate that the small sample size decreases the power of their study to detect small differences.

This paper concludes that a low-vitamin D level should not discourage clinicians from considering abuse when a child has unexplained fractures. This study seems to have successfully refuted the hypothesis advanced that low-serum vitamin D levels, in the absence of clinical or radiographic rickets, can account for otherwise unexplained fractures.

Schilling, S., Wood, J. N., Levine, M. A., Langdon, D., & Christian, C. W. (2011). Vitamin D status in abused and nonabused children younger than 2 years old with fractures. *Pediatrics, 127*(5), 835–841.

Child Abuse and Neglect and Cognitive Function

It is understood that child abuse and neglect (CAN) have harmful effects on brain growth and child development. Although neglect is the more commonly substantiated form of child maltreatment, less research has been done on neglect outcomes. Most studies combine abused and neglected children into one group. One

prospective longitudinal follow-up study looked at neglect and cognitive outcome at age 5 in extremely low-birth-weight infants. The present authors looked at the cognitive outcomes of maltreated children (abuse, neglect, or both) using a population-based longitudinal sample at age 14, with adjustment for relevant social and familial factors.

The database was a longitudinal birth-cohort study of over 7,000 mothers-child pairs in Queensland, Australia, who had enrolled at their first prenatal visit during 1981–1983. Information was collected at that first visit, 5 days after delivery, and when the child was 6 months old, 5 years old, and 14 years old. At age 14, children were administered the Wide Range Achievement Test (WRAT) reading test and Raven's Standard Progressive Matrices (RSPM) to test abstract reasoning. Reports of suspected maltreatment during 1981–2000 were collected from the appropriate agency in Queensland. The researchers considered 18 variables relating to the mothers' demographic, educational, substance use, and peripartum emotional status.

Data from the child protection agency were available for 7,214 children in this cohort. Nearly 11% (789) had been reported for suspected CAN, and maltreatment had been substantiated in 506 children. Nearly 3,800 of the 14-year-olds in this birth cohort completed the WRAT and the RSPM. In this group, 298 had a history of being reported for suspected CAN (7.9%). Thirty-eight percent had been reported for abuse and neglect, the rest for abuse or neglect.

Reporting ("notification") for child maltreatment (abuse, neglect, or both) was associated with a lower score on reading ability (WRAT). Perceptual reasoning, as measured by the RSPM, was also lower. Results were similar when the analysis was done using only substantiated CAN as the predictor, and the association was the same when abuse or neglect was looked at separately after adjustment for a range of potentially confounding variables. Neglect is at least as harmful as abuse in this respect. Interventions need to be devised that are effective in preventing neglect.

Mills, R., Alati, R., O'Callaghan, M., Najman, J. M., Williams, G. M., Bor, W., & Strathearn, L. (2011). Child abuse and neglect and cognitive function at 14 years of age: Findings from a birth cohort. *Pediatrics, 127*(1), 4–10.

Abusive Head Trauma by Male and Female Perpetrators

Abusive head trauma (AHT) is estimated to occur annually in 15–40 children per 100,000 children younger than 1 year of age. Male perpetrators of AHT outnumber females in most studies, but no studies before this one have examined the effect of perpetrator gender on victim presentation, clinical outcome, or perpetrator legal outcomes. The authors reviewed 48 cases of children with AHT presenting to a tertiary care children's hospital. They defined AHT as injury occurring in a child < 5 years of age with intracranial injury on neuroimaging and no adequate history to explain the injuries. The presence of retinal hemorrhages or noncranial injuries was not necessary to define AHT. Of the 48 cases of AHT, perpetrators were identified for 34 (17 men and 17 women).

The mean age of the 34 children was 9.4 months; time to seek medical care ranged from 0–48 hours (mean 4.5); days of hospitalization ranged from 2–43 (mean 12). Thirty-one children presented with acute symptoms (cardiopulmonary arrest, respiratory arrest, seizures). Fourteen children had neurosurgical interventions (41%). Six children died (17%). All 6 children at autopsy showed evidence of rotational acceleration-deceleration injury (which is considered to be shaking-specific). Retinal hemorrhage was present in 82% of the 34 patients. The severity of retinal hemorrhage was associated with the severity of the intracranial injury.

The perpetrators were between 16–60 years old. The median age of female perpetrators was 34 years, versus 27 years for males (p=.001). Biologic parents were most common followed by mothers' boyfriends. The following variables were significantly associated with male perpetrators: acute presenting findings of cardiopulmonary or respiratory arrest (p=.025), severe clinical outcome (p=.012), neurosurgical intervention (p=.037), death (p=.018), perpetrator confession (p=.0001), and conviction (p=.005). The six children who died did so at the hands of male abusers. Fourteen of the 15 men who confessed described shaking the victim. Of the 3 women who confessed, 2 described shaking, and one both shaking and impact; 82% of male abusers were convicted, and 2 were awaiting trial; 29% of female abusers were convicted.

The authors question whether the outcomes for males' victims are different because of perpetrator gender differences or rather because of the greater upper body muscle mass of men. They also call for research to clarify if gender bias exists in prosecuting AHT perpetrators.

Esernio-Jenssen, D., Tai, J., & Kodsi, S. (2011). Abusive head trauma in children: A comparison of male and female perpetrators. *Pediatrics, 12*(7), 649–657.

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