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Medical Assessment and Legal Outcome in Child Sexual Abuse

Vincent J. Palusci, MD; Edward O. Cox, MD; Tracy A. Cyrus, MSW; Susan W. Heartwell, MPA; Frank E. Vandervort, JD; Erika S. Pott, MD

Objective: To examine the relationship of behavioral symptoms, interview disclosures, and physical examination findings with changing legal outcomes in child sexual abuse.

Design: Retrospective case series.

Setting: Hospital- and community-based multidisciplinary child abuse evaluation teams in the same county in 2 periods.

Patients: Children ages 0 to 17 years referred for evaluation of sexual abuse.

Main Outcome Measures: Substantiation by child protective services, issuance of a warrant by law enforcement authorities, and criminal penalties were compared with reported changes in behavior, disclosure by the child, and physical evidence on examination.

Results: Among 497 children evaluated in 1991-1992 and 1995-1996, those with a positive examination finding were 2.5 times more likely to result in a criminal prosecution with a finding of perpetrator guilt ($P<.001$). Similar rates of disclosure, positive examination findings, child protective services substantiation, and warrant issuance were noted in the 2 periods. Decreasing rates of guilt determination and increasing criminal penalties were identified in 1995-1996 ($P<.002$). Disclosure of child sexual abuse during medical assessment was significantly associated with a positive physical examination finding, child protective services substantiation, and issuance of a warrant, but not a finding of guilt or criminal penalty.

Conclusions: Medical assessment plays an important role in the overall community response to child sexual abuse. While behavioral symptoms and disclosure are important in medical treatment and child protective services investigation, positive physical findings are associated with a finding of guilt. There is a trend toward less finding of guilt and more years of criminal penalty that is not explained by case characteristics.

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Editor's Note: It's nice to know that the medical and legal systems can sometimes work together for positive outcomes—especially when they relate to helping children.

Catherine D. DeAngelis, MD

From the Child Protection Team, DeVos Children's Hospital (Drs Palusci, Cox, and Pott and Ms Cyrus), the Children's Assessment Center (Ms Heartwell), Grand Rapids, Mich; and the Michigan Child Welfare Law Resource Center, University of Michigan Law School, Ann Arbor (Mr Vandervort).

While medical assessment is important to meet health needs in child sexual abuse (CSA), the ultimate protection of the child and prevention of further abuse often depend on legal outcomes influenced by many factors. Much has been learned about the medical examination in CSA, and most children referred for medical evaluation have normal or nonspecific findings.[1-10] The impact of community resources, multidisciplinary approach, investigative standards, and prosecutorial, judicial, and public policy on CSA outcome is less understood.

When a health care provider obtains a medical interview, performs a physical examination, and orders laboratory tests, it is presumed that these actions will positively affect an investigation by child protective services (CPS) and law enforcement officers. Marked variation has been reported in the prosecution and imposition of criminal penalties, depending on the standard used in determining whether abuse actually occurred, the type of abuse, and victim and perpetrator characteristics.[11-17] Given the relative youth of this field and our concern for children, it is important for medical professionals to develop a further understanding of this relationship to prevent abuse and train future clinicians.[18,19]

It is our perception that while medical diagnosis and treatment depend pri-

MATERIALS, PATIENTS, AND METHODS

SETTING

This study was performed in a mixed urban, suburban, and rural county in the midwestern United States with a population of 520 123, including 151 632 children. Most (85.6%) described themselves as white, African American (11.6%), or Latino (2.3%). Of these, 8.4% received Aid to Families with Dependent Children support. Community services include 4 acute-care hospitals, a county-based CPS, 11 local police jurisdictions, a county sheriff, state police, and county-based criminal and probate courts.

During the study period, there were approximately 100 substantiated sexual abuse reports annually to CPS in this county. Two community initiatives coordinated the medical, CPS, and law enforcement responses to CSA. The first used multidisciplinary evaluations within a general pediatric teaching clinic of a community hospital, with interviews performed by a nurse and examinations done by a single, specially trained pediatrician from July 1, 1990, through September 30, 1992. The second program is an independent, freestanding, nonprofit agency housing a medical unit, law enforcement, CPS, counselors, and support personnel that opened in January 2, 1993. Interviews were conducted by multiple nurses and examinations were provided by multiple pediatricians using comparable interview and examination protocols.

PATIENTS

We retrospectively constructed a case series consisting of all children ages 0 to 17 years referred for medical evaluation for possible CSA in separate 2-year periods: 1991-1992 and 1995-1996. Information was collected through medical record review to record the child's age, gender, history of behavioral or physical indicators, content and credibility of any disclosure of CSA, assessment of physical examination findings, and presence of laboratory evidence of sexually transmitted infection. Child protective services and adult court records were used to collect information regarding substantiation by CPS, warrant issuance for the arrest of an alleged perpetrator, any determination of guilt of an alleged perpetrator, and any imposed criminal penalties.

MEDICAL ASSESSMENT

Using a structured format, information was collected regarding a history of behavioral or physical indicators of child abuse, including abdominal, genital, or rectal pain; genital or rectal discharge or pruritus; dysuria or urinary tract infection; vomiting or constipation; unconsciousness, seizures, or physical injury; encopresis or enuresis; sleeping, eating, or school problems; unusual or excessive fearfulness, anger, depression, or suicidal thoughts; and excessive sexual behavior.

The content of a child's disclosure, if any, during the medical assessment was reviewed to identify the alleged perpetrator, and the interviewer's assessment of its consistency and credibility were used to define CSA disclosure. Physical findings on anogenital examination were assessed using a classification proposed by Adams and Knudson[2] with normal (class I), nonspecific (class II), concerning (class III), suspicious (class IV), and definitive (class V) findings. Classes III, IV, and V were considered to represent positive physical findings. Children were tested for sexually transmitted infections as recommended by the American Academy of Pediatrics.[16] Positive serology findings for *Treponema pallidum* or human immunodeficiency virus or a culture positive for *Neisseria gonorrhoeae* or *Chlamydia trachomatis* was considered laboratory evidence of a sexually transmitted infection. All children were examined more than 72 hours after alleged CSA, and forensic evidence of semen or sperm was not collected.

STATISTICAL ANALYSIS

Results were analyzed using the SPSS statistical software package (version 6.0, SPSS Inc, Chicago, Ill), and χ^2 analysis was used to compare medical and legal variables in the 2 periods. Four stepwise linear and logistic regression models were used to analyze the independent effects of the medical variables and period. Child protective services substantiation, issuance of warrant, finding of guilt, and years of criminal penalty were used as dependent variables while controlling for patient age and gender, as suggested in other studies.[11-15] Given the number of variables and analyses, α was set to .01, and 95% confidence intervals were calculated when appropriate. Adjusted odds ratio, positive predictive value, sensitivity, and specificity[17,20] were calculated for components of the medical evaluation to better understand their association with legal outcomes and for comparison with prior reports. This study was reviewed and approved by the our institutional research and human rights committee.

marily on the disclosure and behavioral symptoms of the child, the legal response relies heavily on physical examination findings. Furthermore, we have noticed that there are fewer pleas of guilt in our community related to CSA, with more trials, less finding of perpetrator guilt, and more years of criminal penalty upon plea or conviction. To evaluate these trends over time, we studied the correlation of behavioral symptoms, medical interview disclosures, and physical examination findings with CPS substantiation, issuance of a warrant by the prosecutor, plea or finding of guilt in court, and the imposition of criminal penalties in 1991-1992 and 1995-1996.

RESULTS

Among 497 children examined (**Table 1**), the mean age was 7.4 years (age range, 2-17 years). More than three fourths (78%) were girls. Behavioral symptoms were present in most (82%), more than half (57%) disclosed sexual abuse during the evaluation, and a minority (17%) had positive physical findings. No children had laboratory evidence of a sexually transmitted infection. Other than the presence of behavioral symptoms, no significant differences were noted in disclosure rates or positive examination findings between the 2 periods.

Table 1. Medical Outcomes

Outcome	Total Sample	1991-1992	1995-1996	P*
No. of patients	497	154	343	
Mean age, y (95% CI)†	7.4 (7.1-7.6)	7.5 (6.9-8.0)	7.4 (6.9-7.8)	>.01
Male gender, %	22.3	18.8	23.9	>.01
Behavioral symptoms, %	81.5	92.9	76.4	.001
Disclosure, %	57.1	63.6	53.9	>.01
Positive examination finding, %	17.4	21.4	14.3	>.01

*By χ^2 analysis, 2 × 2 table.
†CI indicates confidence interval.

Table 2. Legal Outcomes

Outcome	Total Sample	1991-1992	1995-1996	P*
Any perpetrator identified, %	82.2	79.5	86.5	>.01
Juvenile perpetrator, %	29.5	27.7	30.6	>.01
Perpetrator of male gender, %	94.6	96.5	93.3	>.01
Parent/stepparent perpetrator, %	27.3	35.1	24.2	<.001
Child protective services substantiation, %	60.3	62.4	59.1	>.01
Warrant issued, %	34.0	37.7	32.4	>.01
Adults found guilty, %	34.8	37.7	27.0	<.001
Mean prison sentence, y	9.7	5.3	11.7	.002†

*By χ^2 analysis, 2 × 2 table.
†One-way analysis of variance, 2 tailed.

Information was available regarding perpetrators in 82% of cases (**Table 2**). Of these, juvenile perpetrators (less than age 17 years) were reported in 29% of the cases and most (95%) were male. In open CPS cases, CPS substantiated reports in 59%. A warrant was issued for the arrest of the alleged perpetrator in 34% of cases (32.4% in 1995-1996 vs 37.7% in 1991-1992). There was a mean sentence of 11.7 years for those adults who were convicted in 1995-1996, compared with 5.3 years in 1991-1992. Among 51 arrested adult perpetrators in 1995-1996, there were 42 pleas of guilt, 4 trials had guilty verdicts, and 1 trial had a not guilty verdict. The remaining 4 cases were dismissed or still pending. In 1991-1992, all 48 adult perpetrators who were arrested pled guilty.

Using regression analysis (**Table 3**), some aspects of the medical evaluation were found to be significantly associated with legal outcomes, controlling for patient age and gender. Disclosure of CSA significantly predicted CPS substantiation and warrant issuance. Children with a disclosure of CSA were almost 4 times more likely to have a positive examination finding, and cases with a positive examination finding were 2.5 times more likely to result in a finding of guilt of the perpetrator; however, disclosure was not independently predictive of guilt. Increasing age was independently associated with issuance of a warrant and a finding of guilt. While the percentage of cases resulting in a finding of guilt significantly decreased in 1995-1996 (odds ratio, 0.30; 95% confidence interval, 0.17-0.51), the mean penalty imposed was 6.5 years more in 1995-1996 than in 1991-1992 after controlling for patient age and gender. Gender and behavioral symptoms were not found to be independently associated with any of the medical or legal outcomes.

Using Bayesian analysis[17] (**Table 4**), a positive physical examination finding was better than disclosure or behavioral symptoms in predicting issuance of a warrant, CPS substantiation, and a finding of guilt. A lack of disclosure best predicted the absence of a warrant, CPS substantiation, or a finding of guilt.

COMMENT

Our study demonstrates the strong association between positive physical examination findings and a finding of perpetrator guilt in CSA. There is a trend toward fewer pleas, more trials, and significantly greater penalties when the perpetrator is found guilty. While significantly associated with legal outcomes, disclosure of abuse predicted less than half of CPS substantiations and law enforcement warrants. A lack of CPS or legal action was best predicted when a child did not disclose CSA during the medical assessment. This suggests that the medical assessment is important in initiating a community response to CSA that can positively affect children and prevent further abuse by providing a foundation for medical, legal, and social work interventions on behalf of the child, family, and society. It may also have the untoward effect of limiting further intervention. Clinicians must understand the importance of talking to children to properly obtain a disclosure of CSA, if any, in addition to performing a detailed physical examination, given the significance of the medical assessment in the legal response.

While disclosure of CSA was associated with CPS substantiation and warrant issuance, positive examination findings and increasing patient age (and not disclosure) were associated with a determination of guilt for adult perpetrators. Older children were more likely to have positive physical examination findings, issuance of a warrant for the perpetrator, and a finding of guilt. While it is not apparent from this study, we suspect that older children are more verbal and may give more credible disclosure than younger children, resulting in more warrants and convictions. More positive physical examination findings may be found in older children because of the nature of CSA victimization at differing ages.[5] We found that 35.8% of cases with successful criminal prosecution had positive physical findings, compared with 12.7% of cases in which there was no prosecution or a finding of not guilty.

While important in medical assessment and treatment, behavioral symptoms were not specific indicators of CSA and were not predictive of legal outcome. This may reflect their relatively low positive predictive value or our overinclusion of many nonspecific complaints. Specific sexualized behaviors or knowledge may be a better indicator.[10,21] While a positive physical examination result was predictive of a finding of guilt, 53 (67%) of 82

Table 3. Regression Analysis

Outcome	Odds Ratio (95% CI)*			
	Study Period	Age	Interview Disclosure	Positive Examination Finding
Positive examination finding	$P>.01$	1.13 (1.05-1.20)	3.76 (1.86-7.63)	. . .
Child protective services substantiation	$P>.01$	$P>.01$	1.91 (1.22-2.98)	$P>.01$
Warrant issued	$P>.01$	1.10 (1.04-1.16)	2.43 (1.54-3.84)	$P>.01$
Finding of guilt	0.30 (0.17-0.51)	1.14 (1.06-1.22)	$P>.01$	2.52 (1.40-4.56)
Years of penalty†	6.46 (2.85-10.06)	$P>.01$	$P>.01$	$P>.01$

**Odds ratios are included if* $P<.01$. *CI indicates confidence interval. Values for gender and behavioral symptoms were not statistically significant.*
†Linear regression: adjusted $r^2 = 0.130$; $P<.01$.

children with positive examination findings had no finding of adult perpetrator guilt. This may result from the fact that examination cannot by itself generally answer the question in a legal setting of who abused the child. A lack of information regarding juvenile prosecution and penalties prevents analysis of legal outcomes in young perpetrators. Further analysis might have been possible had information also been recorded as to the time interval from abuse to examination, with correlation of specific positive findings in relation to the alleged act(s). There was also no independent confirmation by expert review of photographs or videotapes, which might have improved the precision of case evaluation and the identification of those findings more predictive of CSA outcomes.

This study is limited by its nonuniform approach to the collection of data. Different interviewers and examiners were involved during 2 different periods in this special population referred for concerns of CSA, and the results may not apply to a general population of children. The results may not apply to patient populations in different jurisdictions with differing ethnicity or socioeconomic status. In the absence of a confession by the perpetrator, a finding of guilt often serves as a standard in determining whether CSA has actually occurred; however, a finding of guilt is also affected by law enforcement, prosecutorial, and judicial policies. With varying levels of certainty, CPS substantiation and issuance of warrant can also serve as proxies for the determination of CSA.

Overall, this study did find a high frequency of behavioral changes and disclosure of abuse with a low proportion of positive physical findings using cases from a single community in two 2-year periods. Victims were primarily girls, and perpetrators were almost all male (30% under age 16 years and 27% a parent or stepparent). These results were not different than those reported by others.[2-6,8-10,22] Legal outcomes were also consistent with prior reports, including approximately one third of perpetrators being arrested and 60% of cases being substantiated by CPS.[2,11-15] This higher percentage of cases substantiated by CPS compared with prosecution may reflect a different investigative standard in our jurisdiction that allows a determination based on the presence of credible evidence that CSA has occurred. The overall rate of either plea or conviction appeared to be relatively high in adults, although the criminal penalty associated with those pleas or convictions was similar to that in other jurisdictions.[11-15] This may be affected by incomplete information regarding legal outcomes for any cases still pending in criminal or juvenile justice systems,[11] but we we unable to identify any changes in the law or sentencing guidelines to explain these differences.

Table 4. Sensitivity, Specificity, and Predictive Values of Outcomes

Test	Behavioral Symptoms	Interview Disclosure	Positive Examination Finding
Child Protective Services Substantiation			
Sensitivity	0.848	0.690	0.216
Specificity	0.202	0.494	0.862
Positive predictive value	0.358	0.417	0.451
Negative predictive value	0.717	0.752	0.677
Issuance of Warrant			
Sensitivity	0.888	0.769	0.260
Specificity	0.223	0.534	0.884
Positive predictive value	0.370	0.459	0.537
Negative predictive value	0.793	0.818	0.699
Finding of Guilt			
Sensitivity	0.861	0.764	0.389
Specificity	0.193	0.464	0.873
Positive predictive value	0.153	0.194	0.341
Negative predictive value	0.891	0.921	0.894

The varying importance of case characteristics and components of the medical assessment in the legal process has been noted in other jurisdictions. In Philadelphia, DeJong and Rose[11,12] found that physical evidence was present in only 23% of successful felony prosecutions, and a greater proportion of cases resulted in conviction without physical evidence. In the southwestern United States, Brewer et al[15] noted that prosecution was more likely when the perpetrator had multiple victims, was a stranger, had older victims, or perpetrated more serious abuse with physical evidence.

CONCLUSIONS

Components of the medical assessment are significantly related to legal outcomes, including finding the perpetrator guilty, assigning criminal penalties, and

aiding CPS and law enforcement to prevent further abuse through case substantiation and warrant issuance. Fewer criminal pleas of guilt and convictions with higher criminal penalties over time in our community are not related to changes in case characteristics in CSA. We can only speculate as to the changing judicial and public policies resulting in these trends. Further study would be helpful to understand the role of medical evaluation in other jurisdictions and in child populations that may have different legal outcomes dependent on CPS, law enforcement, prosecutorial, and judicial policies.

By relating legal outcomes to the medical evaluation of CSA, our study highlights the importance of the medical assessment in the overall community response beyond meeting the medical needs of the child. A medical assessment is more than just a physical examination. It begins a community response in which cases can move to CPS substantiation, issuance of a warrant, finding of guilt, and criminal penalty. This process is aided by disclosure and positive physical findings that are significantly related to criminal outcome. Clinicians can play an important role in helping our community to protect children and prevent further abuse by carefully recording any disclosure of CSA, performing a thorough physical examination, and working with other professionals who respond to, identify, treat, and prevent CSA.

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Reprints: Vincent J. Palusci, MD, Child Protection Team, DeVos Children's Hospital, 100 Michigan St, MC-98, Grand Rapids, MI 49503 (e-mail: Vincent .Palusci@Spectrum-Health.org).

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