

## **Somatic, Cognitive and Emotional Characteristics of Abused Children in a Psychiatric Hospital**

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**ABSTRACT:** A systematic review of medical records of one hundred consecutive admissions to a children's psychiatric inpatient unit was conducted to assess specific somatic, cognitive and emotional characteristics that distinguish sexually abused children from other hospitalized children. Sexually abused children were characterized by: a lower performance IQ, higher incidence of parasomnia prior to admission, longer length of hospital stay, and comparatively small physical stature.

**KEY WORDS:** Child abuse, sexual; growth, sleep; intelligence; depression.

Child abuse constitutes a prevalent and severe form of environmental stress in a child's development. Many behavioral and psychological difficulties have been associated with child abuse. The literature consistently points to the following: sleep problems, somatic complaints, depression, low self-esteem, withdrawal, and aggressive and sexualized behaviors.<sup>1-14</sup> Methodological issues have blurred our understanding of research findings in this area. Two issues appear to be of particular importance: (1) a clear definition of child abuse and sample characteristics (i.e., form and severity of the abuse, and comorbidity); and (2) the inclusion of developmental perspective in the assessment of adaptation and psychopathology (i.e., age of the child when the abuse occurred, age of the child when his/her adaptation or

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psychopathology is being assessed). The present study is an attempt to study these issues in a population of severely behaviorally disordered, hospitalized children.

One of the most consistent findings in studies of the behavioral correlates of child abuse is sleep complaints.<sup>2,3</sup> Sleep problems are also important symptoms (i.e., a diagnostic criterion) in many DSM III-R diagnoses in childhood and adulthood.<sup>15-18</sup> In addition, it has been argued that sleep problems associated with child abuse and trauma may play a significant role in a child's physical growth due to the relationship between sleep and growth hormone secretion.<sup>17</sup> The present retrospective chart review focused on cognitive, biological and affective dimensions associated with child abuse in a sample of psychiatrically hospitalized children. Our prediction was that we would find differences between abused and non-abused samples of children on the somatic and emotional dimensions.

## Methods

### *Subjects*

One hundred medical records of children consecutively admitted to the Children's Inpatient Unit (CIU) at E.P. Bradley Hospital, Providence, RI were included in this study. The sample consisted of 83 boys and 17 girls, aged 2.4 to 13.8 years (mean = 8.07; *sd* = 2.55). Duration of hospitalization varied from 8 to 292 days (mean = 60.4; *sd* = 52.5).

### *Procedure*

A standard evaluation was completed for each child admitted to the CIU. The evaluation included medical, behavioral, cognitive and emotional assessments. These assessments were completed by the treatment team which is composed of representatives from Nursing, Social Work, Psychiatry and Psychology. The psychological evaluation included the administration of the Wechsler Intelligence Scale for Children-Revised (WPPSI-R for children younger than 6 years) the Child Depression Inventory (CDI<sup>19</sup>), and an assessment for the presence and forms of child abuse. Standardized psychiatric interviews with children and their parents were used to determine DSM-III-R diagnoses. Medical chart progress notes were utilized to document difficulties related to bedtime and sleep as well as incidents of enuresis and encopresis during daytime and nighttime. The child and parents were separately interviewed about the existence of either child abuse or substance abuse in the family as well as any child difficulties with falling asleep, night awakening, or parasomnias. For a child to be in the sexually abused group, he or she must have experienced contact sexual abuse by someone at least 5 years older. Those in the physically abused group must have experienced hitting,

kicking, beating or other physically injurious behavior that was later substantiated by the RI Child Abuse Network and Tracking System. Children who experienced both sexual and physical abuse were included in the sexual abuse group.

### Results

From the total sample of 100 children, 49 children had a previous history of sexual abuse (or reported such on the unit), 23 children had a history of physical abuse and 28 children had no documented history of physical or sexual abuse. For group comparison, analysis of covariance was used for continuous measures (with age as the covariate) and Chi Square Analysis for categorical data.

The three groups did not significantly differ in age or gender distribution (Table 1). The sexually abused group had a mean age of 7.95 years, the physically abused group mean age was 7.88 years, and the non abused group mean age was 8.44 years. Of the 49 children reporting sexual abuse, 39 were male (47% of the total sample of boys), with an additional 22 boys reporting a history of sexual abuse and one had a history of physical abuse (5.9%).

Significant group differences were not found for CDI scores or prev-

**Table 1**  
Characteristics Associated with History of Abuse—Group Means (SD) or Percentages of the Group; F Values are Based on ANOVA or Chi Square Analyses

Measure	Abuse History			F or $X^2$
	Sexual	Physical	None	
Boys	47%	26.5%	26.5%	
Girls	58.8%	5.9%	35.3%	
Age	7.95 (2.56)	7.88 (2.05)	8.44 (2.91)	.40
IQ Full Scale	92.2 (15.1)	95.7 (15.4)	100.6 (17.3)	1.87
Performance	90.1 (15.2)	94.0 (15.7)	100.3 (16.8)	3.24*
Verbal Score	95.5 (15.9)	97.9 (16.4)	100.6 (16.6)	.80
CDI Score	19.1 (10.3)	17.6 (12.6)	14.7 (6.12)	1.87
Substance Abuse	51.0%	43.5%	46.4%	.395
Placement Out of Home				
Prior to Admission	24.5%	4.35%	10.7%	5.53
Post Discharge	44.9%	21.7%	21.4%	6.15*
Length of Stay	73.2 (52.4)	53.3 (63.5)	43.7 (36.1)	3.20*

\* $p < .05$

**Table 2**  
DSM-III-R Diagnoses: Group Percentages and Chi Square Analyses

<i>Diagnosis</i>	<i>Sexual</i>	<i>Abuse History Physical</i>	<i>None</i>	<i>X<sup>2</sup></i>
PTSD	73.5%	26.1%	7.14%	35.7*
MDD	24.5%	34.8%	28.6%	.83
Anxiety Disorders	18.4%	21.7%	32.1%	1.93
ADHD	22.5%	34.8%	25.0%	1.25
Opposit. Defiant	34.7%	17.4%	39.3%	3.1
Attachment Dis.	18.4%	0.00%	10.7%	5.06

\* $p < .0001$

absence of substance abuse in the family. In the analysis of intelligence test scores, age and test type (WISC-R vs. WPPSI) were used as covariates to control for group age differences and possible effects of using different IQ tests for younger and older children. No significant differences were found for either Full Scale IQ scores or Verbal IQ scores. However, a significant difference was found for performance IQ difference was found in the Performance IQ scores ( $F = 3.24$ ,  $p < .05$ ). Duncan post-hoc analysis revealed that the sexually abused group had a significantly lower Performance IQ compared with the Non-Abused group. Sexually abused children also had a longer duration of hospital stay ( $F = 3.20$ ;  $p < .05$ ) and a greater likelihood of placement outside the home post discharge ( $X^2 = 6.15$ ,  $p < .05$ ).

With respect to DSM-III-R diagnoses (Table 2), the only diagnosis that was represented more often for one of the three groups was PTSD. Sexually abused children were most likely to meet criteria for PTSD (73.5%) as compared to the physically abused group (26.1%) and the non-abused children (7.14%), ( $X^2 = 35.7$ ;  $p < .0001$ ).

In the sleep domain (Table 3), a higher incidence of parasomnias prior to admission was reported for the sexually abused children (20.4%), when compared to the physically abused group (4.35%) and non-abused group (3.7%) ( $X^2 = 6.26$ ,  $p < .05$ ). No other group differences were found for sleep problems either prior to admission or post admission.

There were no group differences in the incidence of enuresis and encopresis (Table 3). A relatively high proportion of children in all three groups were enuretic (43%) or encopretic (20%). There were significantly more children of small stature ( $\leq 5$ th percentile for height and weight) in the sexually abused group (20%) as compared to the physically abused group (9.09%) and the non-abused group (0%), ( $X^2 = 7.20$ ;  $p < .05$ ).

**Table 3**  
Somatic Characteristics Associated with History of Abuse—Group Means (SD) or Percentages of the Group; F Values are Based on ANOVA or Chi Square Analyses

Measure	Abuse Status			F or X <sup>2</sup>
	Sexual	Physical	Non	
<i>Sleep Prior to Admission</i>				
Sleep Onset	12.2%	13.0%	11.1%	.045
Night Waking	16.3%	4.35%	17.9%	3.34
Parasomnia	20.4%	4.35%	3.70%	6.26*
<i>Sleep on Unit</i>				
Falling Asleep	.082 (.20)	.047 (.19)	.010 (.039)	1.58
Night Waking	.947 (.82)	1.34 (1.2)	1.11 (1.06)	1.23
Parasomnia	.378 (.57)	.325 (.69)	.337 (.60)	.07
<i>Somatic Issues on Unit</i>				
Enuresis	49.0%	30.4%	42.9%	2.20
Encopresis	20.4%	13.0%	25.0%	1.13
Small Stature	20.8%	9.09%	0.00%	7.20*

\*\*p<.05

A total of 41 children (36 boys and 5 girls) made their first disclosure of abuse during their hospitalization. The length of time on the unit before a child made such a disclosure ranged between 2 and 90 days (mean = 24.2; std = 23.8). This measure was positively correlated with the child's length of stay ( $r = .58$ ;  $p < .0001$ ). Girls were more likely to make the first disclosure sooner than boys (10.4 vs. 24.1 days, respectively;  $t = 35.4$ ;  $p < .001$ ).

### Discussion

Sexually abused children were found to differ from physically abused and non-abused, hospitalized children in having lower Performance IQ scores, a higher incidence of parasomnias prior to hospitalization, a longer inpatient stay, a greater chance of other than home placement after discharge, more likely PTSD diagnosis, and comparatively small physical stature.

The prevalence of child abuse found in this sample of psychiatric inpatient children (72%) is higher than reported in previous reports. Other studies in clinical inpatient or outpatient settings reported significantly lower rates of abuse. Rogeness et al<sup>20</sup> reported 99 cases of child abuse (sexual or physical) or suspected abuse in 539 children

admitted consecutively to a children's psychiatric hospital. Gale et al<sup>21</sup> identified 37 children with a history of sexual abuse and 35 children with a history of physical abuse in 202 children seen at a community mental health center. In a child psychiatric inpatient settings where a history of sexual abuse was specifically asked for, the prevalence rate of sexual abuse was 16% for boys and 43% for girls.<sup>22</sup>

It is unclear if the higher prevalence of child abuse (particularly for boys) found in the present study is a result of a growing incidence of child abuse, a growing social awareness and sensitivity to these issues, or the special training given to staff in the detection and treatment of child abuse on the Children's Inpatient Unit. It has been argued based on a critical review of survey data that childhood sexual abuse is not increasing in prevalence in the general population.<sup>23</sup> However, it has also been demonstrated that direct inquiry leads to a dramatic increase of reports of child abuse in outpatient clinics.<sup>24</sup> In addition, Watkins & Bentovim<sup>25</sup> have also identified a recent tendency toward greater acceptance and recognition of sexual abuse in male children which may result in declining ratio of abused girls to boys. The fact that boys require a longer duration of time in order to make their first disclosure on the unit is consistent with Watkins' & Bentovim's<sup>25</sup> summary of other research findings indicating that boys are less willing to disclose and that they face greater internal and external inhibitions for making a disclosure of sexual abuse. Requiring up to 90 days on an inpatient unit before making a first disclosure of abuse has important implications for the field of child psychiatry. Most of these hospitalized children had been involved in extensive outpatient care prior to their admission but had not disclosed their abuse under those circumstances.<sup>26</sup> These findings underline the enormity of trust issues encountered by these children whose confidence in adults had been severely damaged by a perpetrator who abused them and by significant others who could not protect them or provide them a safer environment. It seems that the security of the inpatient unit, the isolation from the perpetrator and the adoption of new social expectancies may have enabled these children to make their first disclosure. With the growing financial and political pressures to reduce length of stay or to eliminate inpatient services altogether,<sup>27,28</sup> some children may never find the secure setting needed to make a report of past or ongoing abuse.

The finding of a higher incidence of parasomnias prior to hospitalization for sexually abused children is consistent with previous studies.<sup>7,29</sup> What is missing is data on the recency of each child's abuse. Future

studies should include this variable since most studies examining the short-term effects of child sexual abuse have found some sleep problems while those examining longer term effects have tended not to.<sup>7</sup> Clinical interviews with sexually abused children reveal that fear and stress associated with sleep, being in bed, or being in the dark are often associated, with the actual settings in which these children were abused. The child, under such circumstances, may learn that it is unsafe to sleep (Moore<sup>17</sup>), and thus sleep problems may represent a biobehavioral adaptation to an unsafe environment, rather than a pathology per se. The rather surprising lack of significant sleep problems on the unit may be a function of a variety of factors and deserves further study. Potential explanations include the child feeling safer and more protected following admission, differences in who is doing the reporting (parents vs. hospital staff), and the application of a fixed schedule for waking and bedtime in the hospital that helps to regulate and stabilize sleep behaviors.

Moore<sup>17</sup> has argued that sleep problems associated with trauma could affect a child's growth, and Karlsson, Gillberg & Karlberg<sup>30</sup> reported a higher incidence of abnormalities of growth in child psychiatric patients compared to non-psychiatric controls. Other studies have highlighted the phenomena of "emotional dwarfism".<sup>31,32</sup> These studies, however, have not stressed the issue of sexual abuse as an important correlate. It is unclear if the higher incidence of sexually abused children who met the criteria for small stature in our study is a function of the endocrinological relationship between sleep and growth hormone secretion<sup>33</sup> or if small children are somehow more likely to be sexually victimized. This certainly merits further study and replication in other samples.

It was surprising that few differences were found on measures of emotional functioning. While scores on the Child Depression Inventory tended to be higher in the abused samples, the differences were not statistically significant. Substance abuse was also equally likely to be a factor in the families of all three groups. A significantly longer length of hospital stay and placement outside the home for those in the sexually abused group appear to be related to the need to protect the child from further abuse in the home and the difficulty in finding appropriate placements.

Cognitive assessment did result in a finding of lower Performance IQ scores in the sexually abused group. Other researchers have hypothesized and demonstrated differences in the cognitive realm.<sup>29,34</sup> A recent study by O'Leary et al.<sup>35</sup> is suggestive of specific cognitive defi-

cits in being able to access complex memory in sexually abused children and adults. The present findings appear to be in line with such cognitive deficits but further research is needed.

Diagnostic status has been a focus in several previous studies.<sup>11,36,37</sup> The present study finds a much greater likelihood of a PTSD diagnosis for sexually abused children (73.5%) as compared to physically (26.1%) and non-abused (7.14%) groups. No differences were found for other diagnostic groups. Finkelhor and Browne<sup>38</sup> proposed a four factor traumagenic dynamics model. This model holds that sexual abuse affects four main areas of a child's development: sexuality, ability to trust others, self-esteem, and the feeling of being able to have some influence over life events. The results of the present study offer additional evidence for the links between sexual abuse and specific cognitive and somatic deficits.

The limitations of a retrospective chart review prohibit us from reaching any conclusions regarding the causal relationships between sexual abuse and cognitive, sleep and growth problems. However, the findings raise questions that should be further explored: (1) Are small children more likely to be sexually abused or does sexual abuse and the related trauma interfere with sleep and growth? (2) Do these children feel safer and protected sleeping in hospital and sleep labs, thus leading to sleep problems observed or reported to occur at home not being detected through careful unit observations? (3) Do sexual abuse and the related trauma interfere with cognitive development, and in particular, with aspects related to perceptual-motoric skills? These issues await further prospective research.

### Summary

Sexually abused children identified on a psychiatric inpatient unit were compared to physically abused and non-abused children on emotional, somatic and cognitive measures. Children with history of sexual abuse were characterized by: (1) a lower performance IQ; (2) higher incidence of parasomnia prior to admission; (3) longer length of hospital stay; and (4) comparatively small physical stature. Children needed between 2 and 90 days to make a first disclosure of abuse on the unit. Boys needed more time than girls to make such first disclosure. The results support previous findings indicating that sexual abuse is associated with somatic and cognitive disturbances in child development.

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