Homicidally Aggressive Young Children: Neuropsychiatric and Experiential Correlates

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Of 55 children admitted to a children's psychiatric service, 21 were homicidally aggressive. Psychiatric symptoms and diagnoses did not distinguish these children from the nonhomicidal children, but the homicidally aggressive children were significantly more likely to 1) have a father who behaved violently, often homicidally, 2) have had a seizure, 3) have attempted suicide, and 4) have a mother who had been hospitalized for a psychiatric disorder. The authors explore explanations for the contribution of these factors to juvenile violence. (Am J Psychiatry 140:148-153, 1983)

The purpose of this paper is twofold. First, we shall report a high prevalence of homicidal behaviors in a 1-year sample of young children hospitalized on a child psychiatry inpatient unit. Second, we shall attempt to identify neuropsychiatric symptoms and experiential factors associated with these homicidal behaviors.

In a previous study on violent adolescents (1), we found that adolescents sent to a hospital psychiatric unit were as violent as adolescents who were sent to a correctional school. We also found (2) that extremely violent behaviors in adolescents were associated with psychotic symptoms and neurological impairment. Especially violent adolescents also had both witnessed and been the victims of severe physical abuse. Little, to date, has been reported regarding the neuropsychiatric status of extremely violent young children. We wondered whether young children hospitalized for psychiatric disorders were as aggressive as their adolescent counterparts and whether aggression in young children was associated with neuropsychiatric or experiential factors similar to those for adolescents.

LITERATURE REVIEW

Murder by young children is a rare event. Hence, there is a paucity of literature on the subject. In 1961 Easson and Steinhilber (3) described 8 cases of murderous aggression by male children and adolescents, only 1 of which resulted in death. They focused on the apparent psychodynamics of the acts and concluded that one or both parents had fostered or condoned murderous assault. Michaels (4), reviewing Easson and Steinhilber's clinical data, reported enuresis in 6 of the 8 boys, epilepsy in 3, and a history of abuse by a parent in 3 cases. More recently Walshe-Brennan (5) described 11 children convicted of homicide and noted that many of the boys had overly dominant mothers. According to Walshe-Brennan, these youngsters had normal intelligence and personality and were healthy and free from epilepsy. Sargent (6) described 5 murderous children and hypothesized a family conspiracy in which the child who killed acted out an unconscious parental wish. Tooley (7) described 2 children who, he believed, killed their siblings while acting out maternal wishes. Probably the best study of homicide by young children is Bender's report (8) of 33 young murderers evaluated over 24 years. Of the 33, 12 were eventually diagnosed as schizophrenic, 7 as having chronic brain syndrome without epilepsy, 3 as epileptic, and 3 as intellectually defective. Noteworthy is the fact that, of the first 16 children, none were considered schizophrenic at the time of their initial evaluation although 5 were subsequently so diagnosed. Bender also called
attention to environmental factors, such as extreme violence in the family.

Most studies have focused on the small number of children who have actually killed others and have made inferences regarding psychodynamic influences. Instincts of homicidal aggression that have not resulted in death have been ignored. Given the sparseness of the literature, we welcomed the opportunity to review the hospital records of an entire 1-year sample of young children hospitalized for psychiatric disorders both to assess the prevalence of homicidally aggressive behavior in them and to learn which clinical and experiential factors were associated with such behavior.

METHOD

Our setting was the child psychiatry inpatient service at a midtown hospital in a major city, a ward of 18 beds for children aged 3 to 12 years. It is primarily a diagnostic service, on which patients remain an average of 90 days. Our sample consisted of all children (N = 55) admitted to the service in a single year in the late 1970s. Data on socioeconomic status were incomplete; however, the facility serves primarily children and families from classes IV and V (9) and a few from classes I–III. There were 24 (44%) black, 23 (42%) Hispanic, and 8 (14%) white children in the sample. There were 42 boys and 13 girls.

Data were obtained from hospital records, which, because of long stays and the teaching functions of the service, included detailed developmental, family, and medical histories; psychiatric evaluations; physical examinations, including neurological assessments; psychological testing (Gesell Developmental Schedule, WISC-R); educational assessments (Gray Oral Reading Test, Wide Range Achievement Test); and, in most cases, EEGs. The use of hospital records has advantages and disadvantages. Data are not uniform or complete because they are not collected primarily for research purposes. On the other hand, data obtained from retrospective chart reviews of symptoms and behaviors are unbiased by the possible prejudices of the investigators.

All symptoms and signs, past and present, that were mentioned in the charts were recorded. Specifically, the following signs and symptoms were noted: visual or auditory hallucinations; loose, rambling, illogical thought processes; paranoid ideation; isolation or withdrawal; sadness or crying; enuresis; sleep problems (e.g., inability to fall asleep, wandering at night); minor neurological signs (e.g., coordination problems, choreiform movements, synkinesis); ever having had a seizure of any kind; and a diagnosis of reading or mathematical disability. A symptom or sign was considered present if a clinician so stated and documented it with an example. Similarly, any reference in the chart to the following behaviors ever having occurred was recorded: suicidal behaviors (e.g., jumping from windows, trying to hang or stab self, mention of suicidal ideation), serious assaultiveness other than occasional fist fights with peers (e.g., attacking a child or adult with an object, attempting to choke someone, stabbing or threatening with a knife, setting fire to another person), cruelty to animals, fire setting without obvious homicidal interest, and deviant sexual behaviors (e.g., frequently exposing genitalia, molesting younger relatives).

Diagnoses were made throughout hospitalization by several different clinicians from different disciplines who had varying levels of expertise. Most children received several diagnoses. Admission and discharge diagnoses and all others mentioned in the chart were recorded. Considering the many diagnoses given each child, the validity of any diagnosis remains in question. (We are currently studying the validity of these diagnoses and their relationship to symptoms, behaviors, treatment, socioeconomic status, and race.) Diagnoses were categorized as follows: psychosis other than autism (e.g., childhood schizophrenia, pervasive developmental disorder, psychotic episode), attention deficit disorder (including hyperactivity or minimal brain dysfunction), retardation, conduct disorder (including sociopathy or unsocialized aggressive reaction), neurosis or adjustment reaction, organic brain syndrome, epilepsy (including grand mal and petit mal), and autism.

We also reviewed the doctors' order sheets and nursing notes to determine the kinds of medications that had been prescribed. Medications were categorized as follows: antipsychotic (e.g., phenothiazines, butyrophenones), stimulants (e.g., amphetamine, methylphenidate), and antiepileptics (e.g., phenytoin, phenobarbital, carbamazepine). Other categories of medication were so rarely mentioned that they were not reported for this study.

Assessment of Homicidally Aggressive Behaviors

Any mention in the chart of a child's current or past aggressive, withdrawn, peculiar, or otherwise maladaptive behaviors was recorded verbatim. Four independent raters were then required to rate whether or not the child had ever been homicidally aggressive, using as the criterion whether or not the child's act was so violent that, had it been performed by an adult, it would have resulted in death or serious injury. Threatening with a potentially lethal object or weapon was also rated as homicidally aggressive. Accidental injury to another was not rated as homicidally aggressive. Fire setting alone was not considered homicidal unless it involved deliberately setting fire to another person. If a child had set fire to a person, he was counted as positive for both homicidal aggression and fire setting. For a child to be categorized homicidally aggressive, 3 of 4 raters had to agree on the rating. In all cases aggression was longstanding, as well as a current problem leading to admission, and no child rated homicidally aggressive had committed only a single seriously aggressive act.
RESULTS

Clinical and Behavioral Differences

Of the 55 children, 21 were judged to have been homicidally aggressive, and 30 were considered not homicidally aggressive. Agreement could not be reached about 4 children, 3 boys and 1 girl (all of whom had threatened homicide or carried weapons but had not threatened with weapons), so they were excluded from the study, which left 51 children. Of the 39 boys, 44% (N=17) were rated homicidally aggressive; of the 12 girls, 33% (N=4) were rated homicidally aggressive. These proportions did not differ significantly.

Of the 21 homicidally aggressive children, 9 had attacked siblings, 5 had attacked mothers, 5 had attacked peers, 3 had attacked teachers, and 4 had attacked other relatives or acquaintances. Of note, none had attacked his or her father and only 2 had threatened or expressed a wish to do so. The homicidally aggressive acts and other violent behaviors of each child are presented in table 1.

The homicidally aggressive children did not differ significantly from the nonhomicidal children in terms of the diagnoses they had received. Similar proportions of homicidally aggressive and nonhomicidal children, during or before hospitalization, had received diagnoses of psychosis (38% and 40%), attention deficit disorder (48% and 52%), conduct disorder (52% and 37%), neurosis or adjustment reaction (29% and 23%), and retardation (26% and 29%). The proportion of homicidally aggressive children who had been diagnosed epileptic was higher than that for nonhomicidal children (29% versus 7%), and autism was somewhat less prevalent in the homicidally aggressive group (5% versus 30%), but these differences did not reach statistical significance. There was also no significant difference between the two groups when we considered discharge diagnoses only.

Pharmacologic treatment also did not distinguish the two groups; 70% of the homicidally aggressive and 66% of the nonhomicidal children had been treated with antipsychotic medications, 29% and 18% with stimulants, and 26% and 10% with antiepileptic medications.

The homicidally aggressive and nonhomicidal children had surprisingly similar symptoms. Similar proportions had experienced visual hallucinations (30% and 32%), auditory hallucinations (55% and 41%), looseness of associations (30% and 31%), paranoid ideation (40% and 32%), isolation or withdrawal (29% and 40%), sadness or crying (14% and 20%), neurological soft signs (80% and 83%), learning disabilities (48% and 60%), and enuresis (35% and 21%).

The proportions of homicidally aggressive and nonhomicidal children with histories of cruelty to animals (14% and 3%), fire setting (33% and 19%), and deviant sexual behaviors (16% and 17%) were not significantly different. The most significant behavior distinguishing the homicidally aggressive from the nonhomicidal children was suicidal behavior (57% versus 23%; \( \chi^2 = 4.681, p = .031 \)). For example, 1 child allegedly threw himself down a flight of stairs at age 1½ years and subsequently attempted to jump out of a window; another deliberately stood in front of a moving bus; another expressed the wish to kill himself, ran into traffic, and put his hand in a box of broken glass; another tried to set herself on fire; another tried to stab herself with a knife and also tried to jump off a roof; another, aged 3½ years, was found with an extension cord around his neck; and another twice tried to take a drug overdose and once jumped from a second story window. The most common form of suicide attempt in this group was jumping from a window or roof; 8 of the 21 homicidal children had tried this method. Suicidal ideation was also significantly more prevalent in the homicidally aggressive group of children (80% versus 30%; \( \chi^2 = 10.083, p = .002 \)).

Seizures

One of the major factors distinguishing the homicidally aggressive from the nonhomicidal children was a history of seizures. Of the 21 homicidal children, 48% (N=10) definitely had a history of seizures, compared with 7% (N=2) of the 30 nonhomicidal children (\( \chi^2 = 10.092, p = .002 \)), and an additional 10% (N=2) of the homicidal children probably had seizures. Of the 10 homicidal children with definite seizures, 1 had had grand mal and petit mal seizures and a seizure following concussion, 1 had had meningitis with coma and seizures, 1 had had seizures secondary to lead poisoning, another had had posttraumatic epilepsy and subsequently had coma and seizures associated with measles, 1 had had grand mal only, 1 was retarded and had had "seizures in early childhood," and 1 had had both febrile seizures and seizures following a concussion. Three children had had febrile seizures only. Of the 2 children with equivocal histories, 1 had had "episodes of leg stiffening in infancy" and "was followed in pediatric neurology clinic," where a brain scan was performed. The other had episodes of falling to the ground, losing consciousness, twitching, and having no memory for the event.

Of note, although having had seizures significantly distinguished the groups, EEG abnormalities did not. Of the 16 homicidally aggressive children on whom EEGs were performed, 38% (N=6) had EEGs that were reported to be abnormal, compared with 48% (N=10) of the 21 nonhomicidal children for whom EEG data were available. The data were insufficient to compare types of EEG abnormalities.

A high proportion of children in both groups had histories of perinatal problems, 79% of the homicidal group and 66% of the nonhomicidal. There was a tendency (n.s.) for more of the homicidally aggressive children to have a history of head injury (57% versus
TABLE 1. Homicidal Acts and Other Violent or Deviant Behaviors of 21 Homicidal Children

<table>
<thead>
<tr>
<th>Patient</th>
<th>Sex</th>
<th>Age (years)</th>
<th>Homicidal Behaviors</th>
<th>Other Violent or Deviant Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>F</td>
<td>12.5</td>
<td>Strangled sister until she turned red; tried to choke cousin, says witch's voice told her to do this</td>
<td>Bites children in school</td>
</tr>
<tr>
<td>2</td>
<td>M</td>
<td>8.4</td>
<td>Set fire to couch where mother was sleeping, singed mother's hair</td>
<td>Fights with peers; set fires in home 3 weeks before admission</td>
</tr>
<tr>
<td>3</td>
<td>M</td>
<td>8.9</td>
<td>Attempted to stab homemaker with knife, says he &quot;wanted to see her dead&quot;; wants to kill mother, father, and grandmother and to &quot;cut off my sister's tit&quot;</td>
<td>Carries pocket knife &quot;for protection&quot;; fights with teachers; knocked out peer's teeth in fight over cookies</td>
</tr>
<tr>
<td>4</td>
<td>M</td>
<td>10.4</td>
<td>Tried to stab brother 3 or 4 times with knife and fork</td>
<td>Put penis in mouth of 2-year-old cousin; drew picture of boy having head cut off by Devil; set fires in trash can, igniting entire apartment</td>
</tr>
<tr>
<td>5</td>
<td>M</td>
<td>9.9</td>
<td>Tried to choke boy on hospital ward; hit brother on head with bunk bed ladder</td>
<td>In kindergarten fought with teachers and peers, needed to be restrained at ankles and wrists; bit and punched staff members on ward</td>
</tr>
<tr>
<td>6</td>
<td>M</td>
<td>10.2</td>
<td>Tried twice to kill mother, stood over her with hammer and turned on gas jets in house; wanted to kill boy with kitchen knife</td>
<td>Threw brick from roof of treatment center, angry that someone messed up art work</td>
</tr>
<tr>
<td>7</td>
<td>F</td>
<td>6.6</td>
<td>Taunts older brother with knife, threatening to cut off his head</td>
<td>Uncontrollable at home and school; fights with siblings and friends; plays with matches</td>
</tr>
<tr>
<td>8</td>
<td>M</td>
<td>11.4</td>
<td>Threatened to kill mother; tried to strangle brother and sister with hands</td>
<td>Scratched mother on face and chest when she tried to separate him in fight with another boy</td>
</tr>
<tr>
<td>9</td>
<td>M</td>
<td>3.9</td>
<td>Threw scissors at mother and visitor, held knife to mother's throat while she slept</td>
<td>Throws furniture; fights with peers</td>
</tr>
<tr>
<td>10</td>
<td>M</td>
<td>9.9</td>
<td>Threatened to kill mother; threatened brother with butcher's knife twice; threatened to poke out teacher's eyes; hit teacher with rubber bat</td>
<td>Hits and throws objects at mother; fights with friends; lit fire after voices told him to do so; cruel to family dog</td>
</tr>
<tr>
<td>11</td>
<td>M</td>
<td>11.3</td>
<td>Drew kitchen knife on mother</td>
<td>Fought and threw chairs on ward</td>
</tr>
<tr>
<td>12</td>
<td>M</td>
<td>8.3</td>
<td>Choked children at school, had to be pulled away</td>
<td>Provoked children on ward</td>
</tr>
<tr>
<td>13</td>
<td>M</td>
<td>9.9</td>
<td>Threatens to kill people with knives; threatened foster mother while playing with knives</td>
<td>Hit children on wards; performed fellatio with another child; punched boy in nose; put cat under hot water; fire setting since age 3</td>
</tr>
<tr>
<td>14</td>
<td>M</td>
<td>9.3</td>
<td>Attempted to awaken mother by hitting her on head with hammer</td>
<td>Fights in school with peers and teachers; exposes genitalia; touches other people's penises; urinates in school staircase; set fire to papers, nearly burned house down</td>
</tr>
<tr>
<td>15</td>
<td>M</td>
<td>12.0</td>
<td>Threatened sister with knife; slept with it under pillow</td>
<td>Threatens brothers with screw drivers; hides knives under bed; tried to break teacher's glasses and pulled hair from her head; wanted to hurt father with knives; set fire to house</td>
</tr>
<tr>
<td>16</td>
<td>M</td>
<td>9.2</td>
<td>Tried to &quot;immolate&quot; a classmate; tried to hit another boy over head with heavy equipment</td>
<td>Fights with peers; provoked peers on ward</td>
</tr>
<tr>
<td>17</td>
<td>F</td>
<td>7.9</td>
<td>Attempted to choke classmate</td>
<td>Collects knives; fights with peers; set fire to kitchen carpet</td>
</tr>
<tr>
<td>18</td>
<td>M</td>
<td>9.1</td>
<td>Tried to stab brother with butcher knife</td>
<td>Tried to attack boy and staff on ward; throws chairs</td>
</tr>
<tr>
<td>19</td>
<td>F</td>
<td>12.6</td>
<td>Gave pills to 5-year-old brother, resulting in hospitalization</td>
<td>Hits and bites people; scratched face of hospital staff member; throws and breaks furniture</td>
</tr>
<tr>
<td>20</td>
<td>M</td>
<td>5.0</td>
<td>Hit teacher with rubber bat, stating he wanted to kill her</td>
<td>Several attacks on teachers</td>
</tr>
<tr>
<td>21</td>
<td>M</td>
<td>11.3</td>
<td>Unprovoked attack on teacher with rubber hose, requiring several men to restrain him; pulled knife on peers who had beaten him up</td>
<td></td>
</tr>
</tbody>
</table>

30%) and to have averaged a greater number of head injuries as well.

Family Violence and Psychopathology

Almost all of the children in both groups had a biological mother in the home, 95% of the homicidal group and 87% of the nonhomicidal group. On the other hand, few households in either group had a biological father living at home (5% versus 27%; $\chi^2 = 2.710$, $p = .100$). Nevertheless, records indicated that when the fathers of the homicidal children did appear, their presence was often literally "felt"; in 62% of the households of homicidal children, the fathers had been physically violent to the mothers, compared with only 13% of the households of nonhomicidal children ($\chi^2 = 11.020$, $p = .001$). In fact, 37% of the fathers of homicidal children had themselves
been homicidal, as had 13% of the fathers of nonhomicidal children. For example, 2 fathers were in jail for manslaughter, 1 was wanted for murder, 1 had been deported from the United States for stabbing a man, 1 father had attempted to drown his son, 1 father threw his infant daughter against a crib, and 1 father was charged with assault after beating his wife so severely that she was hospitalized for 2 weeks.

Alcoholism was also significantly more common in the fathers of homicidally aggressive children (52% versus 10%; $\chi^2 = 9.115, p = .003$). Moreover, although similar proportions of children in each group had been physically abused by someone (55% and 45%), abuse by fathers specifically was more common in the homicidal group (29% versus 7%). In spite of the greater prevalence of violence among the fathers of the homicidal children, similar proportions of fathers in each group were said to be known to the courts or police (33% and 30%).

In contrast to the fathers, only 10% of the mothers in each group were known to have been in trouble with the law. Of the mothers of the homicidally aggressive children, 25% had physically abused their children, as had 26% of the mothers of nonhomicidal children; 33% and 26% of the respective groups were alcoholic; and 19% and 3% had been violent toward their husbands. None of these differences was significant. However, when these women were violent, they were very violent; 2 of the mothers of homicidal children had stabbed their mates in the chest. The most significant factor distinguishing the mothers of homicidally aggressive children from the mothers of nonhomicidal children was a history of psychiatric hospitalization; 43% and 7%, respectively, had been hospitalized for psychiatric disorders ($\chi^2 = 7.544, p = .007$).

**Multiple Regression Analysis**

We wondered which combination of the many symptomatic, behavioral, family, and experiential variables most clearly distinguished the homicidally aggressive from the nonhomicidal children. We therefore conducted a stepwise multiple regression analysis, using homicidal aggression and its absence as the dependent variables. We used as the independent variables those factors that seemed to distinguish the groups from each other on chi-square tests and analyses of variance—namely, suicidal behavior, seizures, numbers of head injuries, abuse by one’s father, father’s violence toward the mother, father’s alcoholism, and mother’s admission to a psychiatric hospital. We found that the following combination of factors significantly distinguished the groups: father’s violence toward the mother, seizures, suicidal behavior, and mother’s admission to a psychiatric hospital. These factors together accounted for 57.5% of the variance. The father’s violence toward the mother accounted for 27.5% of the variance, seizures for 15.7%, suicidal behavior for 9.2%, and the mother’s admission to a psychiatric hospital for 6.9%.

**DISCUSSION**

A constellation of physiological, behavioral, and experiential factors seems to have contributed to extreme violence in these psychiatrically impaired children. Whether or not this constellation is characteristic of most extremely aggressive young children is uncertain and awaits replication studies.

How might these factors operate to engender violence? Having a seriously psychiatrically impaired mother is likely to contribute to a child’s violent behaviors in several ways. Obviously, the fact that a mother has been hospitalized for a psychiatric disorder from time to time suggests that a child has experienced some loss and inconsistent, erratic mothering. Moreover, a seriously disturbed mother is likely to have been emotionally unavailable even when physically present. In addition to their own psychopathology, over 60% of the mothers of the homicidally aggressive children had married violent, physically assaultive men. Thus the households in which these children were raised were filled with violence. Many of the chart descriptions of the fathers indicated that they were as psychiatrically impaired as their wives, but their violent, often psychotic behaviors were perceived by society as merely antisocial. Hence they were rarely hospitalized for psychiatric disorders.

Having one or two psychotic parents also suggests that many of the homicidally aggressive children may, themselves, have been vulnerable to periodic psychotic disorganization (10, 11). This predisposition to pervasive psychiatric disturbance may explain in part their bizarre patterns of homicidal and suicidal behavior. Both completed suicidal acts and completed homicidal acts are extremely rare for young children (8, 12). Suicide attempts are somewhat more common (13). When seen separately or together, they often indicate severe psychopathology (8, 14).

The finding of a history of seizures in almost 50% of the homicidal children came as a surprise, especially because many had experienced only febrile seizures. The literature (15) suggests that early febrile seizures do not have significant sequelae. The relationship of violence to seizure disorders remains an area of active debate (16–19). It was impossible in these cases to determine whether any of the violent behaviors reported were temporally related to a seizure. However, given the prevalence of head trauma and/or perinatal problems in this sample, it seems that the significance of seizures is primarily an indicator of CNS dysfunction. This kind of CNS vulnerability is often associated with lability of moods and impulsivity (20, 21). We speculate that CNS dysfunction combined with a vulnerability to psychotic disorganization contributed to the children’s impulsive self-destructive and homicidally aggressive behaviors.

Whatever the importance of CNS vulnerabilities and/or a predisposition to psychosis, the most significant factor contributing to violence seems to have been experiential, namely, having a violent father. In what
ways might paternal violence encourage violent aggression in children? First, a violent father furnishes a model for behavior. Second, when directed toward the child his violence often causes the very CNS vulnerability to impulsiveness about which we have spoken. Finally, witnessing and being the victim of irrational violence engenders a kind of rage and frustration that, when directed inward, expresses itself as suicidal behavior. When directed outward and displaced from the father, it manifests itself as homicidal aggression.

REFERENCES