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Epilepsy and Deafness: The Issue of Violence

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Abstract

The leading etiologies of deafness and of epilepsy are similar resulting in significantly more epilepsy in the deaf population. This study of 50 deaf epileptics reveals more males than females, a high rate of multiple disabilities, and a lower mean I.Q. The major finding was that 36 percent of the sample had serious problems with violent behavior.

Nothing has been published on the general topic of epilepsy and deafness nor on the specific relationship of this dual condition to violence. This is unfortunate for two reasons. First, the major causes of deafness (meningitis, prematurity, Rh factor, rubella, etc.), with the exception of heredity, are also the leading etiologies of epilepsy (Vernon & Andrews, 1990). Second, certain forms of epilepsy, e.g., those that are associated with temporal lobe lesions, are reported by some to have significant influence on aggressive behavior (Blumer, 1984; Lindsay, Ounsted, & Richards, 1979; & Rodin, Katz, & Lennox, 1976). In fact, epilepsy is increasingly used as a defense in crimes of violence (Treiman, 1986).

The present study examines the relationship of deafness and epilepsy by describing 50 cases of deaf individuals who were also epileptic. Our major hypothesis is that there will be significantly more violence in this population than among deaf and hearing people in the general population.

Sample and Method

Sample

The senior author has been a practicing psychologist in schools for deaf children, a psychodiagnostician for vocational rehabilitation, a clinical psychologist in mental hospitals, and a forensic psychologist over the past 30 years. The files of 2550 of the deaf persons evaluated by him during these 30 years were examined. The 50 individuals in whom the presence of epilepsy was medically established comprise the sample for this research.

Method

All 50 of these persons had been administered a full psychological evaluation. The psychodiagnostic, educational, clinical, demographic, and case history information from these evaluations comprise the data for this retrospective investigation of deafness, epilepsy, and violence.

Results

General Demographic Data

Sixty percent of the epileptic sample were male, which is consistent with a higher prevalence of most disabilities among males. Seventy-eight percent (N=39) were deaf, i.e., they could not understand speech with or without a hearing aid. Sixteen percent (N=8) were hard of hearing and six percent (N=3) had a combination of some significant degree of hearing loss for pure tones plus an auditory agnosia (inability to interpret sound). Onset of hearing loss was congenital for 66 percent (N=35), 24 percent (N=12) lost their hearing before age 7 years (all but 3 prelingually), and for one case age at onset was unknown.

As would have been predicted based on causes of deafness in general, the leading etiologies of epilepsy and deafness were meningitis, rubella, heredity, prematurity, and Rh factor (Table 1). The only surprise was the 14 percent of epileptic deaf persons with a genetic etiology (N=7).

In addition to causing the secondary disability of epilepsy, the etiologies of meningitis, rubella, prematurity, and Rh factor caused additional handicaps such as cerebral palsy, mental retardation, and organic brain syndromes (Table 2 & 3). In fact, a number of our cases had multiple secondary handicaps (Table 4). These cases tell us clearly that when persons have both deafness and epilepsy they are at great risk for additional disabilities, especially ones reflecting other brain damage.

Intelligence

Intelligence is essentially normally distributed in the deaf population (Vernon & Andrews, 1990). However, as would be expected with a brain damage sample (epilepsy is a form of organic brain syndrome), the average IQ of these epileptic cases was lower, i.e., a mean of 82.6.

Epilepsy, Deafness and Violence

For purposes of this research, violence was defined as physical assault (e.g., murder by stabbing or arson, killing animals, fighting, self-mutilation), verbal assault involving a threat to seriously injure or kill another person, or assault against property (one enraged individual beat on his girlfriend's car resulting in over $1,000 in damages). Based on these criteria 36 percent of our sample had histories of significant violent behavior. In a number of cases the violence occurred at or around the time of a seizure. Seventy-one percent of the rubella cases in the sample were violent. This association of rubella and deafness to violence has been reported before (Vernon & Hess, 1983) and is illustrated by the following case:

While still a baby, Mr. Doe was taken in by a maternal aunt who raised him until his threats and assaults on her led to his placement with the correctional system where he has been for the last two and a half years. He was also in a foster home briefly where the father was deaf, but this terminated because the wife was frightened of him. His history includes incidents of arson (one involved an alleged attempt to burn a cousin), self-mutilation, killing animals, and physical assaults and threats on teachers, peers, and staff members of institutions where he has been.

Mr. Doe was dismissed from two state Schools for the Deaf, a private School for the Deaf, and a Rehabilitation Center. In all cases, the reasons he was forced to leave were fighting peers, attacking or threatening staff, and a minimal effort to learn. Mr. Doe has also been confined to two state mental hospitals several times for paranoid psychotic episodes and lesser difficulties.

It is well established that both deaf and hearing persons with a history of rubella have significantly more mental illness and behavior disorder than the general population (Chess, Fernandez, & Korn, 1978). However, it is also important to note that the overwhelming majority of rubella deafened persons do not have seizures and are not violent. Many have achieved outstanding success (Vernon & Hess, 1983). Among deaf epileptics there are also many persons who are not violent.

Discussion

We feel that the major finding of this research is the discovery of a markedly increased prevalence of violent, aggressive behavior in deaf epileptics. Most of these violence-prone persons had other disabilities such as cerebral palsy, mental retardation, and psychometric symptoms of organic brain syndromes.

Based on what we know of violence and epilepsy in hearing people, it is most likely to occur if the lesion causing the seizures is in the temporal lobe (Devinsky & Bear, 1984). We assume this to be true of deaf epileptics too, especially since much auditory function occurs in the temporal lobes. This means the probability of other damage to these lobes is heightened in the deaf person. In reporting these findings it is our hope that they will lead to more understanding of the struggles many, not all, deaf epileptics face in controlling violent and/or aggressive impulses. In certain cases where the violence and the seizure occur together it may be that the epileptic individual is out of control and not responsible for the resulting behavior.

Even though 50 cases is a large sample for a condition as rare as epilepsy and deafness, ideally this study would be replicated on a much larger number of cases and involve neurological techniques permitting a more exact determination of the form of epilepsy and the site of lesion causing the seizures.

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TABLE 1

PREVALENCE OF ETIOLOGIES

Seizure population			General deaf population
Etiology	***N***	**Percentage**	**Percentage**
Meningitis	9	18	8-12
Rubella	7	14	7-85 depending on epidemic year
Heredity	7	14	40-60
Prematurity	7	14	17
Rh factor	3	6	3-4
Other*	8	16	
Unknown	9	18	
Total	50	100	

*Other illnesses, brain injuries and prenatal complications

TABLE 2

ADDITIONAL DISABILITIES

Handicap	*N*	Percentage of sample
Mental Retardation	14	28
Cerebral Palsy	8	16
Other Brain Damage	23	46
Visual Impairment	12	24
Aphasia	6	12
Psychosis	5	10
Other handicaps*	15	30
None	10	20

*Including strabismus, asthma, diabetes, poor motor coordination and cardiac disorders

TABLE 3

PREVALENCE OF DISABILITIES BY ETIOLOGY IN SAMPLE

Etiology	MR		CP		OBD		VI		Aph		Psy		Other	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%	*N*	%	*N*	%
Meningitis	3	6	2	4	5	10	1	2	0	0	0	0	1	2
Rubella	4	8	1	2	1	2	3	6	0	0	2	4	6	12
Heredity	0	0	0	0	1	2	1	2	2	4	0	0	1	2
Prematurity	1	2	2	4	4	8	3	6	2	4	2	4	1	2
Rh factor	0	0	0	0	3	6	1	2	0	0	0	0	3	6
Other	4	8	2	4	4	8	2	4	1	2	1	2	1	2
Unknown	2	4	1	2	5	10	1	2	1	2	0	0	2	4
Total	14	28	8	16	23	46	12	24	6	12	5	10	15	30

TABLE 4

PREVALENCE OF MULTIPLE HANDICAPS

Number of Handicaps	*N*	Percentage of sample
One additional HC	18	36
Two additional HC	10	20
Three or more HC	12	24

TABLE 5

PREVALENCE OF AGGRESSIVELY VIOLENT BEHAVIORS BY ETIOLOGY

Etiology	*N*	Percentage of total sample	Percentage of etiology group
Meningitis	2	4	22
Rubella	5	10	71
Heredity	2	4	28
Prematurity	3	6	42
Rh Factor	0	0	0
Other	1	2	12.5
Unknown	5	10	55.5

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