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A DESCRIPTIVE STUDY OF THE INCIDENCE OF SEIZURES AND TEACHERS' ATTITUDES TOWARD CHILDREN WITH EPILEPSY IN THE MINNEAPOLIS, MINNESOTA, PUBLIC SCHOOLS.

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THIS STUDY WAS DESIGNED TO DETERMINE THE INCIDENCE OF SEIZURES AMONG CHILDREN IN A PUBLIC SCHOOL SYSTEM AND TEACHERS' KNOWLEDGE AND ATTITUDES ABOUT EPILEPTIC CHILDREN. OF 70,342 CHILDREN IN MINNEAPOLIS PUBLIC SCHOOLS IN SEPTEMBER 1963, 318 (A RATE OF 4.52 PER 1,000) HAD A MEDICAL DIAGNOSIS OF SEIZURES. FIFTY-SIX PERCENT OF THESE WERE BOYS AND 44 PERCENT WERE GIRLS. TEACHERS IN 16 ELEMENTARY SCHOOLS AND FIVE SECONDARY SCHOOLS RESPONDED TO A 12-ITEM QUESTIONNAIRE DESIGNED TO DETERMINE TEACHERS' KNOWLEDGE ABOUT SEIZURES, THEIR EXPOSURE TO CHILDREN WITH SEIZURES, AND THEIR ATTITUDES TOWARD EPILEPSY AND EPILEPTIC CHILDREN. RESULTS SHOWED THAT EPILEPSY AMONG SCHOOL CHILDREN IS MORE FREQUENT THAN SUPPOSED, THAT STEREOTYPES AND MISCONCEPTIONS ABOUT EPILEPSY AND EPILEPTICS EXIST, THAT KNOWLEDGE OF TEACHERS ABOUT EPILEPSY IS OFTEN SKETCHY, AND THAT TEACHERS' ATTITUDES TOWARD THESE CHILDREN ARE HIGHLY VARIABLE AND OFTEN NOT BASED ON MODERN MEDICAL AND PSYCHOLOGICAL KNOWLEDGE. (JA)

A Descriptive Study of the Incidence of Seizures and Teachers' Attitudes Toward Children with Epilepsy in the Minneapolis, Minnesota, Public Schools

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Teachers' Attitudes and Children with Epilepsy

From a variety of sources there is evidence that misconceptions still abound regarding epilepsy and the person susceptible to seizures. Progress in the medical treatment and control of seizures has far outstripped progress in the social and psychological dimensions of the condition.

For some time the investigator has been deeply concerned about the attitudes of teachers and normal peers toward handicapped children. It is his contention that the child with well-controlled seizures is essentially a normal child and should be educated in the regular school setting. Any problems are likely to be social-psychological and reside chiefly in the mis-conceptions about his condition or mis-perception of him as a person. Because the school is chiefly an agency for imparting accurate knowledge and producing good attitudes in children, teachers are important agents in accomplishing these tasks. Thus, it is crucial that teachers have accurate information about convulsive disorders and develop acceptable attitudes toward children susceptible to epileptiform seizures.

The present study was designed with two purposes: (1) To ascertain as accurately as possible the incidence of seizures among children in a public school system, and (2) To survey teachers' information about seizures and their attitudes toward children with epilepsy in this same school system.

A grant of $1,500 was obtained from the Minnesota Epilepsy League and permission was obtained from Dr. Rufus Putnam, Superintendent, and the administrative staff of the Minneapolis Public Schools to conduct the study among its teachers.

A twelve-item questionnaire (see attachment) was developed which allowed teacher respondents to check simple answers or to comment otherwise as they wished. In addition, teachers were asked for certain identifying information although actual identities were concealed. The questionnaire underwent several revisions and refinements through consultation with a variety of professional and lay persons as well as a pilot study run in a suburban elementary school with a staff of 39 teachers. As a result it was generally possible to complete the questionnaire in five minutes or less.

The incidence of seizures among Minneapolis public school children was to be obtained from a simple tabulation by the school nurse in every building in the system of children with a known medical diagnosis of seizures on the child's school health record.

During the preceding school year (1962-1963) there were exactly one hundred public school buildings in use in Minneapolis with 72,186 children and 2,797 teachers.

76 elementary schools
13 junior high schools
6 senior high schools
3 combined junior-senior high schools

In conference with school officials it was decided to choose schools that were roughly geographically representative of the total school population and that also represented approximately a 25 per cent sample of the teaching staff by levels. Twenty-one schools were finally selected. Sixteen elementary schools had 349 teachers on their staffs, which figure represented 23.64 per cent of the system's 1,476 elementary school teachers. Five junior and/or senior high schools employed 361 teachers, who represented 27.33 per cent of Minneapolis' secondary school teachers.

Sufficient copies of the questionnaire for each teacher were hand delivered to each of the twenty-one buildings selected. The purpose of the study and procedures to be followed were explained in every case to either the principal or building secretary. The questionnaires were then either placed in teachers' mail boxes simultaneously or distributed at a staff meeting. They were completed without discussion among staff members and turned in to the building secretary who packaged and forwarded the completed questionnaires to the central office where they were picked up by the investigator.

By this procedure completed questionnaires were obtained from 664 of a possible 710 teachers for a return of 93.52 per cent. Among the elementary teachers there were 342 of 349 questionnaires returned for a phenomenal 97.99 per cent! Among secondary teachers 322 of 361 were returned for a 89.2 per cent recovery. Only nineteen questionnaires were incompletely filled out with the chief omission a specification of the grade level presently being taught by the respondent.

The data and incidence figures were obtained in the spring of 1964. Incidence figures were forwarded to the central office from school nurses serving all buildings in the system. These were then compiled into a table that showed the number of boys and girls at each grade level with a medical diagnosis of seizures.

Table 1 gives the actual incidence of seizures among boys and girls at each grade level as determined from school health records and reported by school nurses. Table 1 also shows the total school population by grade level and the rate of seizures per 1,000 school population. While the incidence figures were obtained in the spring of 1964, the enrollment figures with which they are compared were those of the fourth week of September, 1963; and those figures were used for all calculations which appear in Table 1.

Some interesting facts are immediately apparent.

1. The over-all rate of 4.52 per 1,000 nearly approximates the most frequently quoted estimate of 5 per 1,000 found in the literature.
2. The special education program which served 1,637 exceptional children included over 1,300 who were mentally retarded or orthopedically handicapped. Brain injury which can cause mental retardation or cerebral palsy might certainly be expected to have epilepsy as a possible concomitant. A rate three times as great as the general rate is not unexpected.
3. Two-hundred-ninety-two children with epilepsy among 68,705 children in regular classes may be computed to show a rate of 4.25 per 1,000.

Table 1

Children in Minneapolis Public Schools
with Medical Diagnosis of Seizures, 1963-64 School Year

Grade	Boys	Girls	Total	Total school population*	rate per 1,000
Kdgtn.	15	14	29	7,394	3.92
One	10	8	18	5,868	3.06
Two	14	10	24	5,457	4.39
Three	8	13	21	5,146	4.08
Four	13	11	24	5,104	4.70
Five	7	9	16	4,916	3.25
Six	18	12	30	4,980	6.02
Seven	21	12	33	5,002	6.59
Eight	16	7	23	4,848	4.74
Nine	9	17	26	5,528	4.70
Ten	15	8	23	5,217	4.40
Eleven	8	7	15	5,076	2.95
Twelve	5	5	10	4,169	2.39
Special classes	19	7	26	1,637	15.88
Total	178	140	318	70,342**	4.52

*End of fourth week of September, 1963.

**Plus 1,746 at Vocational High School (including 499 adults).

The figures on incidence were obtained from the Department of Health, Physical Education, and Recreation on 5/21/64.

4. The highest rates were found among children at the sixth and seventh grade levels with a marked decline in the number of known cases by grades eleven and twelve.

5. Comparatively low rates were found at the first and fifth grade levels where there were marked dips in incidence.

6. Of 318 children with known diagnoses of seizures, boys constituted 56 per cent and girls made up 44 per cent.

Originally the investigator had hoped to make some comparisons of the accuracy and kind of reporting of seizures by asking for teacher nominations and by consulting with records of community physicians, but these steps proved unfeasible and were abandoned. It would be interesting to know if teachers were aware of cases where the information did not appear on school health records or if doctors or parents withheld the fact of epilepsy from the school where good control of seizures had been attained and no medication was required in school. The investigator was told that every effort was made to share such information fully between local medical doctors and school health personnel. While the investigator was impressed by the ostensible cooperation, he is nonetheless intrigued by the possibility of selective communication between doctors and parents and teachers and principals and nurses on the identification or labeling of specific children as epileptic.

The second part of the study centered on the questionnaire which was devised for teachers. The questionnaire called for specific responses to twelve questions designed to determine (1) information about seizures, (2) exposure to children with seizures, and (3) feelings about epilepsy

and attitudes toward children with this condition. In addition, all respondents were asked to indicate (1) their sex, (2) years taught in Minneapolis, (3) total years of experience as a teacher, and (4) the grade level at which they were currently teaching.

The questionnaire was duplicated by the photo-offset process on a good grade of paper. It was attached to a brief cover letter, similarly duplicated, which explained the procedure to be followed in responding to the items.

The great majority of the 664 respondents filled out their questionnaires completely as requested and often made additional comments which could be analyzed qualitatively. Where questionnaires were incomplete, the most frequent omissions were identifying information about specific grade level or years of teaching experience. Eight teachers neglected to indicate their sex; four did not turn the questionnaire over to complete the last five items despite "over" clearly written three times across the bottom of the front page. In nineteen instances the response to one of six items was omitted. Thus, some discrepancies in figures will be noted in analyzing the data along particular dimensions or from question to question.

A breakdown of respondents by sex is indicated in the following table. It can be seen that about one-third of the total sample of regular teachers are men while about one-fifth of the special teachers are men. It can also be seen that the proportions vary greatly from the primary level to the secondary level where men are actually in the majority by two to one.

Table 2

Sex of Respondents

Level	N	Male	Female	No information
Primary(K-3).....	173	2	171	--
Intermediate(4-6).....	131	34	96	1
Junior high(7-9).....	97	48	49	--
Senior high(10-12).....	202	133	66	3
Not specified.....	19	6	9	4
Total.....	622	223(36.32%)	391(63.68%)	8
Special teachers.....	42	8(19.05%)	34(80.95%)	--

Table 3 gives a breakdown of the sample according to mean years of teaching experience. For each of the levels and for the special teachers the mode for experience was in the one through three years (experience) frequency while range of experience ranged from first year through 45 years of teaching experience. Since the data were obtained in the spring of the school year, all teachers were assumed to have had at least that much experience in doing computations involving teaching experience.

Table 3

Mean Years of Teaching Experience

Level	Number	Mean Experience
Primary(K-3).....	173	12.688
Intermediate(4-6).....	131	12.309
Junior High(7-9).....	97	15.263
Senior High(9-12).....	202	14.90
Special teachers.....	42	16.547

Before proceeding to an analysis of the twelve separate questions, a summary of the findings on all twelve questions is presented in Table 4.

Table 4

Summary of Findings on All Twelve Questions

Answers	Regular Teachers N=622	per cent	Special Teachers N-42	per cent
1. In your previous teaching experience, have you had any children with epilepsy in your classroom?				
Yes	294	47.27	37	88.09
No	277	44.53	5	11.91
Uncertain	51	8.20	0	0
2. Do you know the difference between a grand mal seizure and a petit mal seizure?				
Yes	305	49.03	40	95.24
No	215	34.57	0	0
Uncertain	101	16.24	2	4.76
No reply	1	.16	0	0
3. In your teaching experience have you ever witnessed any seizures?				
None	414	66.56	8	19.05
Yes	203	32.64	34	80.95
No reply	5	.80	0	0
4. Have you ever had instructions on how to manage the situation if a child has a seizure in your classroom or homeroom?				
Yes	310	49.84	38	90.48
No	311	50.00	4	9.52
No reply	1	.16	0	0
5. Do you feel you could manage the situation if a child were to have a seizure in your classroom or in a student gathering?				
Yes	277	44.53	33	78.57
No	62	9.97	1	2.38
Uncertain	283	45.50	8	19.05

Table 4(continued)

6. Should the teacher be informed if a child is diagnosed as epileptic or having seizures?

Yes.....	619	99.52	42	100.00
No.....	3	.48	0	0

7. Are you willing to have an epileptic child in your class or homeroom provided his seizures are controlled medically to the point of having no seizures?

Yes.....	591	95.02	41	97.62
No.....	24	3.86	0	0
Other reply.....	7	1.12	1	2.38

8. Do you feel that children with epilepsy are likely to have adjustment problems related to their condition?

Yes.....	475	76.37	37	88.10
No.....	92	14.79	5	11.90
Other reply.....	43	6.91	0	0
No reply.....	12	1.93	0	0

9. Could you work comfortably in your class or homeroom with a child who is known to be under medication for seizures?

Yes.....	562	90.35	42	100.00
No.....	31	4.98	0	0
Other reply.....	21	3.38	0	0
No reply.....	8	1.28	0	0

10. Do you think children with epilepsy are likely to be less able intellectually because of their seizures?

Yes.....	44	7.06	12	28.57
No.....	525	84.41	27	64.29
Other reply.....	42	6.76	2	4.76
No reply.....	11	1.77	1	2.38

11. What effect do you think the occurence of a grand mal seizure in class would have on other children?

None.....	51	8.20	9	21.43
Adverse.....	138	22.19	12	28.57
Favorable.....	19	3.05	0	0
Uncertain.....	392	63.02	20	47.62
No reply.....	22	3.54	1	2.38

Table 4(continued)

12. What effect do you think the presence of a known epileptic child would have on other children in your classroom or homeroom?

None.....	256	41.16	24	57.14
Adverse.....	26	4.18	2	4.76
Favorable.....	28	4.50	3	7.14
Uncertain.....	297	47.75	12	28.57
No reply.....	15	2.41	1	2.38

The first question asked about experience with epileptic children in a teacher's classroom. The responses by levels may be seen in Table 5.

Table 5

Children with Epilepsy in Classroom

Level	N	Yes	%	No	%	Uncert.	%
Primary.....	173	57	32.95	103	59.54	13	7.51
Intermediate...	131	43	32.82	79	60.31	9	6.87
Junior high....	97	58	59.79	29	29.90	10	10.31
Senior high....	202	125	61.88	59	29.21	18	8.91
Not known.....	19	11	57.89	7	36.84	1	5.26
Total.....	622	294	47.27	277	44.53	51	8.20
Special ed.....	42	37	88.10	5	11.90	0	0

Some contrasts may be seen immediately. A much greater proportion of secondary teachers than elementary teachers have had experience with epileptic children, and a great majority of special class teachers report such experience. Indeed, one experienced teacher of mentally retarded children in a junior high school remarked, "I don't believe I've ever had a class without at least one in the group."

If one assumes a rate of four or five cases per 1,000 children, it seems obvious that elementary teachers, who average some thirty children each year, are much less likely to have such a child than are secondary teachers who may have several class sections with 150 to 200 students in a year's time. However, comparison of the data on exposure to children with epilepsy to years of teaching experience and grade level does not support the assumption. This may be seen in Table 6.

Table 6

Exposure to Children with Epilepsy Compared to Mean Years of Teaching Experience

Level	N	Yes	No	Uncertain
Primary.....	167	16.283	10.594	10.538
Intermediate..	126	18.829	8.158	17.667
Junior high...	95	18.421	9.821	12.5
Senior high...	202	18.024	9.271	12.0
All regular teachers....	590	17.824	9.693	12.64
All special teachers....	41	18.25	5.6	---

The chief fact which appears is simply that those with more teaching experience are more likely to be exposed to children with epilepsy.

The second question asked, "Do you know the difference between a grand mal and a petit mal seizure?" The responses to this question may be seen in Table 7, which indicates that about half of the total sample knew the difference while a third did not. While the figures for

elementary and secondary teachers are roughly comparable, the great majority of the special teachers in the sample were aware of the difference between a grand mal and a petit mal seizure.

Table 7

Teachers Know Difference Between Grand Mal and Petit Mal Seizures

Level	N	Yes	%	No	%	Uncert.	%
Elementary.....	313	151	48.24	109	34.82	53	16.93
Secondary.....	308	154	50.00	106	34.42	48	15.58
Total.....	621*	305	49.11	215	34.62	101	16.26
Special tchrs..	42	40	95.24	0	0	2	4.76

*One teacher did not reply.

When the replies of those teachers who reported experience with epileptic children were compared to the replies of teachers with no or uncertain experience with such children, an interesting difference appeared. This may be seen in the next table.

Table 8

Knowledge of Kinds of Seizures and Experience with Epileptic Children

Know Difference	Experience with Epileptic Children: Yes				No or uncertain			
Petit Mal-Grand Mal	reg.	%	spec.	%	reg.	%	spec.	%
Yes.....	194	65.99	36	97.30	111	33.94	4	80.0
No.....	56	19.05	0	0	159	48.62	0	0
Uncertain.....	44	14.96	1	2.70	57	17.43	1	20.0
No reply.....	0	0	0	0	1	0	0	0
Total.....	294		37		328		5	

Two-thirds of the regular teachers who reported experience with epileptic children knew the difference between a grand mal and a petit mal seizure while a vast majority of the special teachers with such experience knew the difference.

On the other hand, about two-thirds of the regular teachers who reported no or uncertain experience with epileptic children did not know or were uncertain about the difference between a grand mal and a petit mal seizure. It seems rather clear that when a teacher has an epileptic child or seems likely to have one in class, he will make it a point to learn something about seizure patterns.

Interestingly, however, one-third of the regular teachers who reported such experience indicated that they did not know or were uncertain about the difference in kinds of seizures. One might ask where those teachers had obtained their information when they had not had epileptic children but were informed about seizures. Some evidence on this point may be seen from analysis of their responses to the question about instructions for managing a seizure if one should occur. Table 9 gives the figures for this group of teachers as well as the responses for those teachers who know the distinction between a grand mal and a petit mal seizure.

From their comments to the fourth question it can be seen that where teachers have had epileptic children but are uncertain about types of seizures, the most frequent source of information about managing the child is the school nurse, some other person close to the child, or the child himself; and virtually all comments center on strategy for managing possible seizures.

Table 9

Instructions on First Aid for Managing Seizures
for Two Groups of Regular Teachers

Regular Teachers	N	Yes	No
No experience with epileptic children but knew difference between grand mal and petit mal seizures.....	109	53	56
Experience with epileptic children but did not know difference between grand mal and petit mal seizures.....	94	51	43
TOTAL.....	203	104	99

Where teachers have not had epileptic children in class but know the distinction between types of seizures, the chief source of information is some college course or a first aid class or text, with most comments again centering on strategy for managing a seizure or upon experience in some setting where such information was deemed important.

Of the 42 special teachers in the sample 37 reported instructions on how to handle seizures. Three of the five who had not received instruction were teachers of visually or hearing impaired children. One teacher of crippled children said, "No, the nurse has always been available." Since epilepsy is a highly individual condition in its various manifestations, this question might be posed. Is it important for a teacher to know the difference between a grand mal or petit mal seizure, or is it more important to know the pattern a seizure might take for a particular child and what the chances are that a seizure might occur in school?

The third question asked, "In your teaching experience, have you witnessed any seizures?" Teachers' responses are presented in Table 10 below.

Table 10

Teachers Have Witnessed Seizures

Level	N	None	%	Yes	%	no reply
Primary.....	173	127	73.41	45	26.01	1
Intermediate...	131	95	72.52	36	27.48	0
Junior High....	97	54	55.67	40	41.24	3
Senior High....	202	127	62.87	74	36.63	1
Not known.....	19	11	57.89	8	42.10	0
Total.....	622	414	66.56	203	32.64	5
Special ed.....	42	8	19.05	34	80.95	0

Again, certain contrasts are apparent. Two-thirds of the regular teachers had not witnessed a seizure while less than one-fifth of the special teachers had not seen a seizure. Fewer teachers in the elementary school setting have witnessed seizures than in the secondary school setting. An analysis of the kinds of seizures is seen below.

Table 11

Kinds of Seizures Witnessed by Teachers

Kinds of Seizures	Regular Teachers N	Special Teachers N
Grand mal only.....	49	6
Grand mal and petit mal.....	50	10
Petit mal only.....	61	8
Petit mal and other.....	1	1
Other only.....	40	0
All three.....	1	9
Grand mal and other.....	1	0
Total.....	203	34

Twenty-five (73 per cent) of the 34 special teachers had witnessed grand mal seizures alone or in combination while 100 (49 per cent) of 203 regular teachers had seen grand mal seizures alone or in combination. One-hundred-thirteen (56 per cent) of these 203 regular teachers reported seeing petit mal seizures which are often hard to detect by the casual observer. None of the special teachers marked "other" on the QUESTIONNAIRE, but 43 of the regular teachers did.

Of the regular teachers 203 reported seeing 256 seizures of three kinds, an average of 1.26 kinds of seizures per teacher while 34 special teachers had witnessed 63 seizures in three categories, an average of 1.85 kinds of seizures per special teacher.

The possibility of witnessing, and recognizing a seizure is related to at least three factors upon which evidence was obtained, (1) the presence of a known epileptic child in one's class, (2) knowledge about epilepsy and various types of seizures, and (3) length of teaching experience and the statistical probability of contact with such children or exposure to seizures.

Of 195 regular teachers (eight were excluded for incomplete data) who had witnessed a seizure of some kind, 167 (86 per cent) reported the presence of an epileptic child in class at some time. Another ten (5 per cent) were uncertain about the presence of such a child while only 18 (9 per cent) had witnessed a seizure but had not had an epileptic child in class.

Of the 34 special teachers who had witnessed seizures, 32 (94 per cent) reported children with epilepsy in class at some time. These

findings indicate that the possibility of witnessing a seizure is obviously increased if one has an epileptic child in class. On the other hand, how many teachers reported the presence of epileptic children but had not witnessed a seizure?

Of 403 regular teachers (11 omitted who had not witnessed seizures, 113 (28 per cent) actually reported children with epilepsy in their classes; and another 39 (10 per cent) were uncertain about having had such children. Almost two-thirds of the regular teachers had neither seen a seizure nor had an epileptic child in class. However, of eight special teachers who had not witnessed a seizure, five reported the presence of an epileptic child in class.

Table 12 shows clearly the relationship of length of teaching experience to the possibility of witnessing a seizure.

Table 12

Relationship of Teaching Experience to Witnessing Seizures

Level	YES		NO	
	N	Mean years teaching	N	Mean years teaching
Primary.....	45	16.286	127	10.613
Intermediate...	36	20.60	95	8.758
Junior high....	40	21.846	54	10.377
Senior high....	74	20.792	127	10.929
Total.....	195	19.968	403	10.256
Special	34	20.364	8	4.625

Mean teaching experience for either regular or special teachers who had witnessed seizures was roughly comparable; teachers who had not witnessed seizures generally had much less experience.

Table 13 presents the findings on the relationship of teachers' experience with seizures and their knowledge of types of seizures.

Table 13

Teachers' Experience with Seizures and Knowledge of Types of Seizures

	N	knew petit mal and grand mal seizures					
		yes	%	No	%	Uncert.	%
Regular teachers who had seen seizures.....	202	139	68.81	32	15.84	31	15.35
Special teachers who had seen seizures.....	34	33	97.05	0	0	1	2.94
Regular teachers who had NOT seen seizures.....	414	163	39.37	181	43.72	70	16.90
Special teachers who had NOT seen seizures.....	8	7	87.50	0	0	1	12.50

Over two-thirds of the regular teachers who had witnessed seizures knew the difference between types of seizures. Interestingly, 31 per cent who had witnessed seizures did not know or were uncertain of the various types of seizures. As might be predicted, a majority of regular teachers who had not seen a seizure did not know or were uncertin about types of seizures.

Another pertinent question bears on experience and knowledge. What percentage of those teachers who had (1) witnessed a seizure and (2) had an epileptic child in class knew the distinction between a grand

mal and a petit mal seizure? Presumably one might expect most if not all teachers who had both witnessed a seizure and had an epileptic child in class to be informed on this point. Conversely, few teachers who had neither witnessed a seizure nor had an epileptic child in class would presumably be informed about seizure types. Table 14 presents information on these points.

Table 14

Teachers' Experience with Seizures and Epileptic Children and Knowledge of Types of Seizures

	Knew Petit Mal and Grand Mal Seizures						
	N	Yes	%	No	%	Uncert.	%
Regular teachers who had witnessed seizures and had epileptic children in class..	173	127	73.41	22	12.72	24	13.87
Regular teachers who had not seen seizures, but had epileptic children in class..	118	65	55.08	34	28.81	19	16.10
Regular teachers who had not seen seizures and had not had epileptic children in class..	256	83	32.42	126	49.22	47	18.36
. . . . .							
Special teachers who had witnessed seizures and had epileptic children in class..	32	31	96.88	0	0	1	3.12
Special teachers who had not seen seizures, but had epileptic children in class..	5	5	100.00	0	0	0	0
Special teachers who had not seen seizures and had not had epileptic children in class..	3	2	66.67	0	0	1	33.33

While almost all special teachers who had both witnessed a seizure and had an epileptic child in class knew the difference between a grand mal and petit mal seizures, only about three-fourths of the regular teachers with similar circumstances were so informed. The evidence seems clear; the less contact one has the less likely is he to know the difference between types of seizures. Again, the question may be raised whether it is more valuable to know generally the various types of seizures or to know rather specifically what the chances are that a seizure might occur in school and what to do about it if one should occur. Further evidence is found in the discussion on the next item.

Basic findings on the fourth question, "Have you ever had instructions on how to manage the situation if a child has a seizure in your classroom or homeroom?" "If yes, under what circumstances and when?", appear in Table 15.

Table 15

Instructions on First Aid Procedures for Seizures

	N	yes	%	No	%	no answer
Regular teachers...	622	310	49.84	311	50.00	1
Special teachers...	42	38	90.48	4	9.52	0

Accompanying the data on incidence of seizures which were transmitted to the investigator was the statement, "All schools reported that teachers had been instructed how to manage the situation if a child should have a seizure in the building." In view of the fact that half of the regular teachers in the sample reported that they had <u>not</u> re-

ceived instructions on first aid procedures, the statement must be interpreted to mean that teachers of KNOWN EPILEPTIC CHILDREN had been instructed how to manage a seizure. However, further evidence on this point may be seen in Table 16.

Table 16

Teachers' Experience with Epileptic Children and Instruction on First Aid

	N*	Instruction On First Aid Procedures			
		yes	%	no	%
Regular teachers					
had epileptic children...	290	196	67.59	94	32.41
had not had children.....	275	95	34.55	180	65.45
. . . . .					
Special teachers					
had epileptic children...	37	3	94.59	2	5.41
had not had children.....	5	3	60.00	2	40.00

*57 regular teachers were uncertain or hadn't responded to questions 3 or 4.

About two-thirds of the regular teachers who actually had had epileptic children in class reported that they had received first aid instructions, which means that one-third were reportedly uninformed about strategies if a seizure were to occur. What is the relationship of knowledge about first aid procedures to actual witnessing of seizures? Evidence on this point is seen in Table 17.

Table 17

Witnessing Seizures and Instructions on First Aid

	N	Instruction on First Aid Procedures yes	%	no	%
Regular teachers					
had witnessed seizures....	202	128	63.37	74	36.63
had not witnessed seizures	414	179	43.24	235	56.76
no information.....	6	0	0	0	0
Special teachers					
had witnessed seizures....	34	32	94.12	2	5.88
had not witnessed seizures	8	6	75.00	2	25.00

Again it may be seen that about two-thirds of the regular teachers who had witnessed seizures reported having received instructions for the handling of such situations while less than half (43 per cent) who had not seen a seizure had received such instruction. Since the percentages are about the same for those regular teachers who had (1) had epileptic children and received instructions (68 per cent), and for those regular teachers who had (2) witnessed seizures and received instructions (63 per cent), one might ask if knowledge of first aid procedures is more closely related to the presence of known epileptic children and the possibility of a seizure than to actual occurrence of a seizure.

The answer might be inferred from the numbers who had not had epileptic children and were uninformed about strategies (N=180; 65 per cent) as opposed to those who had not seen seizures and were likewise uninformed about first aid (N=235; 57 per cent). However, information on both of these dimensions appears in Table 18.

Table 18

Teachers' Experience with Epileptic Children, Witnessing Seizures, and Instructions on First Aid

	N	Instruction On First Aid Procedures yes	%	no	%
Regular teachers					
Had epileptic child					
seen seizure.....	172	117	68.02	55	31.98
not seen seizure.....	118	79	66.95	39	33.05
Had not had epileptic child					
seen seizure.....	19	9	47.37	10	52.63
not seen seizure.....	256	86	33.59	170	66.41
No information.....	57	0	0	0	0
Special teachers					
Had epileptic child					
seen seizure.....	32	30	93.75	2*	6.25
not seen seizure.....	5	5		0	0
Had not had epileptic child					
seen seizure.....	2**	2		0	0
not seen seizure.....	3**	1		2	

*one teacher of crippled children who remarked, "Nurse has always been available; one teacher of MR children-male-thirteen years experience-uncertain about ability to manage a seizure.

**one teacher of visually impaired; two teachers of hearing impaired.

It would seem that the presence of a known epileptic child is enough to warrant inquiry or knowledge of first aid procedures although one is struck by the fact that about one-third of the regular teachers who had had epileptic children reported no instructions on first aid. One might well speculate that many children's seizures are controlled to the point that the possibility of a seizure in school should be no threat to the teacher at all. Thus, many of the two-thirds who had had

epileptic children and had received instructions about management of a seizure may actually have been overconcerned with either the label "epilepsy" or the possibility of a seizure occurring in school.

Of some 83 regular teachers who (1) had not had an epileptic child, (2) had not witnessed a seizure, and (3) knew the difference between a grand mal and a petit mal seizure, 43 (51 per cent) had received instruction on first aid procedures.

Of some 126 regular teachers who similarly (1) had not had an epileptic child, (2) had not witnessed a seizure, but (3) did not know the difference between a grand mal and a petit mal seizure, only 29 (23 per cent) reported having received any instructions on first aid. It seems to the investigator that any discussion of epilepsy should consider equally the possibilities and strategies for managing seizures as well as considering the types of seizures.

In answer to a later question in this study, all but three teachers of the entire sample of 664 teachers reported that teachers should be informed if a child is diagnosed as epileptic!

An analysis of years of teaching experience and instruction about first aid for seizures showed virtually no difference in experience for those who had and those who had not been instructed.

In reply to the fourth question, if respondents had answered "yes" to the receipt of instructions, they were asked to comment under what circumstances and when. An expansion of Table 15 to include data on this point follows as Table 19.

Table 19

Instructions and Comments on First Aid Procedures for Seizures

	N	yes		no	
		no comment	comment	no comment	comment
Regular teachers...	621	87(28%)	223(72%)	295(94%)	16(6%)
no reply...	1	0	0	0	0
Total.....		310(50%)		311(50%)	
Special teachers...	42	7	31	3	1

Although teachers who replied affirmatively were asked to comment, it may be seen that 28 per cent did not do so. Interestingly, while teachers who responded negatively were not asked for further comment, 6 per cent did so. More important than whether teachers commented or not is a look at the comments made. An attempt was made to count and categorize all comments. Thus, even though comments were supposed to be chiefly relevant to (1) the circumstances under which, and (2) when instructions were obtained, they ranged broadly in content and from single words to several sentences, such as, "This was long ago. I was told what to do when it happened and to send for the nurse. Usually he had a warning and ran screaming for the nurse." This response could be counted four times, (1) when? long ago, (2) when? if seizure occurred, (3) strategy? send for nurse, and (4) when? had student in class (usually he had warning and ran . . .) Table 20 presents a tabulation of these comments.

Table 20

Comments About First Aid Procedures for Seizures

Comments	Regular teachers	Special teachers
From whom?		
nurse	72	9
parents	6	2
doctor	5	3
principal	5	0
other teachers	4	0
college teachers	3	0
superintendent	2	0
counselor	1	0
child himself	1	0
Dr. Reynolds	1	0
Dr. Karlsen	0	1
Dr. Force	2	0
other, not specified	2	
From what?		
specific college course	54	15
first aid course-tng	33	1
reading	13	4
discussion	9	0
movie	0	1
experience	0	1
first aid chart	3	0
When?		
specific date	22	6
years ago (not specific)	13	0
practice tchg.had child	3	0
first year teaching	3	2
seizure occurred	4	0
in training-other work	9	0
Where?		
specific place	13	1
school-all levels	4	0
Why?		
have now/have had/might have student	34	5
fellow student-friend-relative epileptic	5	0
to handle situation if it arose	10	0
Specify strategy described	20	4
Limited instructions	12	
Other	2	

Two-hundred-thirty-nine (239) regular teachers made 370 comments which could be tabulated while 32 special teachers made 55 specific comments. The shortest comment was the single word general (instructions on how to manage). A kindergarten teacher's verbatim comment was, "(by the child) The child told me she was going to have a (fit) seizure -- asked me to hold her tight and she would be all right--this was in nursery school while practice teaching."

The following observations may be made. Three of the special education faculty at the University of Minnesota were mentioned by name! The school nurse is the most frequent source of information and either seeks out the teacher or is sought out by the teacher in case a seizure occurs or an epileptic child is newly enrolled in class. Why and when actually appear to be identical when mention is made that an epileptic child appeared, or is in class now, and the teacher wants to know what to do or is informed by the nurse of such a child's presence. There was considerable clinical evidence from the comments that this practice operates extensively. Following is a fairly typical statement, "Each time I am notified that a student has seizures--I'm appraised as to what might or might not take place and how to handle it."

College courses in psychology, child development, special education and public health (specifically P.H. 57), as well as a first aid course or first aid training, were mentioned. Instructions were obtained in a variety of training or work settings such as military service, a mental hospital, naval hospital, child care, camp counseling, occupational therapy or physical therapy, and nursing. Thirteen specific places were mentioned by name such as Camp Courage or Hamline University.

Twelve teachers indicated that they had received limited instructions and/or knew little about first aid procedures. Remarks about specific strategies for managing seizures would seem to be a fruitful area for further study because teachers' comments reflect for the investigator considerable ignorance if not misinformation.

Following are fifteen verbatim comments about what to do if a seizure occurs:

1. Lay (child) flat on floor, place pencil or similar object in mouth to prevent biting tongue--keep quiet.

2. If it occurs when the child is at his seat and using a spoon for the child's tounge. (respondent's spelling)

3. I remember a little from College first aid. All I remember is that you're supposed to place something between tongue and teeth to keep a person from biting his tongue.

4. Child had seizures--this was before the calming drugs of today (1944) I was told to lay child down--grasp tongue, etc.--call for help--call mother.

5. Pin limbs down at joints--use tongue depressor.

6. Keep tongue from slipping back, call nurse.

7. Try to get stick in between teeth.

8. Leave him alone and/or call nurse.

9. Instructed to place something in mouth.

10. Told to use tongue depressor and call nurse.

11. Keep child away (or other children away from child with seizure) Try to keep child from choking on tongue. Put hard object in mouth. Send for help.

12. Instructions were to place cushion under victim's head, not to restrain; and to watch that victum did not bite tongue. Several years ago. No seizures occurred.

13. I received a tongue depressor and instructions after one of my students had had a seizure. It was the first or second day of school in September so no warning could have been expected.

14. Call nurse, keep class quiet and away from child. Put something between teeth if necessary.

15. Put child flat on floor, put ruler between teeth, keep him warm and hold him quiet if possible.

In the Emergency Care Chart of the Minneapolis Public Schools, on the page concerned with convulsions, appears this statement from the American Red Cross First Aid Textbook (no date given), pp. 201-202:

1. Do not try to restrain the convulsive movements.

2. Prevent victim from injuring himself.

3. Place a folded cloth, towel, or padded tongue blade between teeth, if it appears that the patient is biting his tongue.

4. Permit victim to rest after seizure.

5. Notify parents.

Several contradictions or conflicting ideas are readily apparent; the investigator's chief concern is over the teacher's insertion of anything in a child's mouth during a seizure!

It is the writer's present contention that teachers should place NOTHING in a child's mouth for two reasons:

1. The possibility of a grand mal seizure occurring in school for a known epileptic child is greatly exaggerated because of the present degree of medical control which is generally attainable.

2. The threat of laceration or biting tongue and the possibility of swallowing the tongue if a seizure should occur are also greatly exaggerated, and the teacher may do more damage by attempting to "help" than if she were to refrain from doing anything.

In a mimeographed memorandum from the central office to the school nurses which appeared just after these data were obtained and which had nothing to do with the present study, the following suggestion was made:

> Have an early conference with parents to see what they do. Prepare all of the children in the room because often they are more of a problem than the victim. Keep victim the proper temperature (Don't cover with a heavy blanket if patient is already in a warm room). Watch for chewing or tongue swallowing, possibly inserting something in mouth (parents will furnish this if they have found it necessary at home).

The underlinings are the investigator's; they clearly point to taking the cue on first aid procedures from what the parents do at home. Current medical opinion is largely agreed that the child should be allowed to have his seizure as comfortably as possible without huring himself (hot or sharp objects), without restraint, and without attempting to place anything in the child's mouth.

Interestingly, perhaps, two or three respondents remarked about strategy for specific cases and then added, "But no seizures occurred." Finally, a male teacher at the secondary level, 12 years of teaching experience, who indicated that he had had epileptic children, knew the seizure types, had witnessed seizures and felt that he could manage if one occurred made this comment which is a classic, "(It sounds easy when instructed what to do, but doing it is another thing)."

The fifth question was stated, "Do you feel you could manage the situation if a child were to have a seizure in your classroom or in a student gathering?"

This item was felt to be one of the most important questions of the study and, by all odds, the most complex both in its dynamics and analyses. The question does not say "grand mal seizure", but this is perhaps implicit in the minds of most respondents when replying. The ability to manage a seizure is conceivably related to such factors as sex of the teacher (men teachers might feel more capable) or level at which one taught (younger-smaller children are easier to manage physically).

Further, the ability to manage seems clearly related to (1) instruction about first aid procedures, and/or (2) having witnessed a seizure at some time, and/or (3) having had an epileptic child at some time.

The basic findings are presented in Table 21.

Table 21

Teachers' Ability to Manage A Seizure in School

Level	N	Yes		No		Uncertain	
		M	F	M	F	M	F
Primary.....	173	2	63	0	25	0	83
Intermediate.....	131	21	40	3	11	10	46
Junior high.....	97*	26	18	5	5	17	26
Senior high.....	202**	72(3)	25	7	4	54	37
Not specified....	19	4(2)	1	0	2	2(2)	6
Total.....	622	125(5)	47	15	47	83 (2)	198
Special.....	42	5	28	1	0	2	6

*Three didn't indicate sex but responded "Yes".

**Four didn't indicate sex; two responded "Yes", two responded "uncertain".

It is notable that nearly equal numbers felt they could manage as were uncertain while one out of ten felt clearly incapable of managing if a seizure were to occur.

In an analysis by sex of those who felt they could manage, 56 per cent (125 of 223) were male teachers while 37 per cent (147 of 392) were female teachers. This points to a clear sex difference in confidence about management of a seizure. This fact is much clearer than a relationship between level taught and the ability to manage, on which information follows:

Primary teachers..... 65 of 173 = 38 per cent
Intermediate teachers..... 61 of 131 = 47 per cent
Junior high teachers..... 44 of 97 = 45 per cent
Senior high teachers.....100 of 202 - 49 per cent

The gap in reported capability between the primary teachers and the senior high teachers is most apparent.

The characteristics of the 62 teachers who reported inability to manage a seizure situation merit further attention. The fifteen male teachers represent 6.5 per cent of the 231 men teachers in the sample; the 47 female teachers represent about 11 per cent of the women teachers in the sample.

Of the fifteen male teachers the following are true:

11 of 15 had no-uncertain experience with epileptic children
13 of 15 didn't know the difference between kinds of seizures
11 of 15 had not witnessed a seizure
12 of 15 had reportedly received no instructions on first aid

Teaching experience ranged from first year to 42 years with a mean of 21.14 years at all levels above fifth grade plus two special areas (music and industrial arts).

Of the 47 female teachers the following are true:

40 of 47 had no-uncertain experience with epileptic children
40 of 47 didn't know the difference between kinds of seizures
42 of 47 had not witnessed a seizure
39 of 47 reportedly had received no instructions on first aid

The lone, special teacher who reported inability to manage a seizure situation was an experienced female teacher of mentally retarded childrer at the junior high level who had had epileptic children in class, knew the types of seizures, had received instructions on first aid, but had not witnessed a seizure.

Each of these several factors can be examined more closely. Presumably, if a teacher has had some instruction in first aid procedures, one might expect more "yes" answers than either other answer. If teachers have not had instructions one might expect more "no" or "uncertain" answers. The findings are presented in Table 22.

Table 22

First Aid Instructions and Ability to Manage Seizures in School

	N	Yes	%	No	%	Uncert.	%
Regular teachers							
had instructions.....	310*	200	64.52	11	3.55	99	31.93
hadn't had instructions.	311*	77	24.68	51	16.35	184	58.97
Special teachers							
had instructions.....	38	31	81.58	1	2.63	6	15.80
hadn't had instructions.	4	2	50.00	0	0	2	50.00

*One made no reply to Question No. 4.

Of those who had received instructions, 65 per cent felt they could manage while 35 per cent felt they couldn't or were uncertain. Conversely, of those who had not received instruction only 25 per cent felt they could manage while 75 per cent felt they couldn't or were uncertain on this point.

If a teacher has had an epileptic child in class and had a favorable experience with him (good control and no adjustment problems), conceivably a teacher would feel more capable on this particular point. Table 23 presents the findings on this particular dimension.

Table 23

Experience with Epileptic Children and Ability to Manage Seizures

	N	Yes	%	No	%	Uncert.	%
Regular teachers*							
had children.....	283	165	58.30	10	3.53	108	38.16
hadn't had children....	277	90	32.49	44	15.88	143	51.62
Special teachers							
had children.....	37	30	81.08	1	2.70	6	16.22
hadn't had children....	5	3	60.00	0	0	2	40.00

*Uncertain responses to Question 1 removed.

It may be seen that a majority of teachers who reported experience with epileptic children felt that they could manage. Since the matter of control of seizures is in itself a factor, these findings must also be delineated. Table 24 presents the findings previously reported in Table 23 but further broken down to include having witnessed a seizure as a further dimension in answering the question about capability of managing a seizure in class.

Table 24

Experience with Epileptic Children and Seizures and Ability to Manage a Seizure Situation

	N	Yes	%	No	%	Uncert.	%
Regular teachers							
had children							
seen seizures.....	164	111	67.68	5	3.05	48	29.27
hadn't seen seizures...	119	54	45.38	5	4.20	60	50.42
hadn't had children							
seen seizures.....	20	10	50.00	3	15.00	7	35.00
hadn't seen seizures...	257	80	31.13	41	15.95	136	52.92
Special teachers							
had children							
seen seizures.....	32	27	84.37	0	0	5	15.63
hadn't seen seizures...	5	3	60.00	1	20.00	1	20.00
hadn't had children							
seen seizures.....	2	2		0		0	
hadn't seen seizures...	3	1		0		2	

Exposure to children with epilepsy and to seizures seems to have a generally favorable effect in that those who felt they could manage increased to 68 per cent, which is in considerable contrast to those who had not had such experience. Those who felt they could manage but who had not, or were uncertain about having had epileptic children and who had not witnessed a seizure represented 17 per cent (38 of 223) of the males in regular classrooms and 15 per cent (57 of 392) of the female teachers in regular classrooms for virtually no sex difference on this point.

However, sex differences were quite apparent in those who felt they couldn't manage (or were uncertain) and who had not had epileptic children (or were uncertain) and had not witnessed seizures--49 of 223 male teachers (22 per cent); 146 of 392 female teachers (37 per cent).

Where teachers have had epileptic children, how does instruction on first aid procedures for seizure affect replies to the question about capability for managing a seizure? This relationship may be seen in Table 25,

Table 25

Experience with Epileptic Children and Instructions and Ability To Manage A Seizure Situation

	N	Yes	%	No	%	Uncert.	%
Regular teachers							
had children							
had instructions	199	140	70.35	5	2.51	54	27.13
hadn't had instructions.	94	25	26.59	5	5.32	64	68.08
hadn't had children							
had instructions	97	53	54.64	6	6.19	38	39.17
hadn't had instructions.	180	38	21.11	38	21.11	104	57.78
Special teachers							
had children							
had instructions	35	29	82.86	1	2.86	5	14.28
hadn't had instructions.	2	1	50.00	0		1	50.00
hadn't had children							
had instructions	3	2		0		1	
hadn't had instructions.	2	1		0		1	

While the percentage of those who thought they could manage under these circumstances is increased slightly over the figures in Table 24 (from 68 to 70 per cent), the percentage who felt they could manage where they had neither had epileptic children nor had instructions is markedly decreased with a corresponding rise in the percentages who felt they couldn't manage or were uncertain about management.

Fifty-six per cent of the regular teachers (165 of 293) who reported experience with epileptic children felt they could manage although what is most striking is the importance of instructions. That is, of those who had children and had received instructions 70 per cent (140 of 199) felt capable while only 27 per cent (25 of 94) of those who had not received instructions felt capable of managing a seizure situation.

Information on the relationship between witnessing a seizure, having received instructions and capability for managing a seizure situation is given in Table 26.

Table 26

Experience with Seizures, Instructions in First Aid, and Ability to Manage

	N	Yes	%	No	%	Uncert.	%
Regular teachers							
witnessed seizures							
had instructions.....	133	98	73.68	1	.75	34	25.56
hadn't had instructions..	69	28	40.58	7	10.14	34	49.27
hadn't witnessed seizures							
had instructions.....	179	101	56.42	10	5.59	68	37.99
hadn't had instructions..	235	49	20.85	43	18.30	143	60.85
Special teachers							
witnessed seizures							
had instructions.....	32	28	87.50	0		4	12.50
hadn't had instructions..	2	1		0		1	
hadn't witnessed seizures							
had instructions.....	6	3		1		2	
hadn't had instructions..	2	1		0		1	

Two-thirds (126 of 202) of the regular teachers who had witnessed seizures felt capable of managing any further situation although what is most striking again is the importance of instructions. That is, of those

who had witnessed seizures, 74 per cent (98 of 133) who had received instructions felt capable of managing while only 42 per cent (28 of 69) of those who had not received instructions felt capable.

It seems apparent that where teachers were informed and had experience with seizures that this made them feel more capable or confident that they could manage if such an event were to happen again. Interestingly, where teachers had witnessed seizures but had received no instructions, they still seem to feel more capable (42 per cent) than did those who had had epileptic children but had not received instructions (27 per cent). The possibility of a seizure in a known epileptic child would seem to be more threatening than the actual social experience of a seizure.

A further analysis was made of reported ability to manage a seizure in relationship to the four variables which seemed most relevant to the investigator. From a logical analysis and inspection of earlier findings one might hypothesize that the person who had experience with seizures and epileptic children and was fully informed might feel the most competent to deal with a seizure situation. Conversely, one might expect to find that those who had no experience and were uninformed to feel the least capable. However, for an uninformed person to witness a seizure might have a strong negative effect on feelings of future confidence. Also, the teacher who has an epileptic child and who is anxious about the possibility of a seizure which may never occur may be greatly concerned about his ability to manage!

Eight combinations of circumstances were delineated by which the findings on the ability to manage a seizure and the sex of respondents could be examined simultaneously.

The eight conditions were as follow:

(1) Had child---------seen seizure---------instructed
(2) Had child---------seen seizure---------not instructed
(3) Had child---------not seen seizure-----instructed
(4) Had child---------not seen seizure-----not instructed

(5) Hadn't had child--hadn't seen seizure--instructed
(6) Hadn't had child--hadn't seen seizure--not instructed
(7) Hadn't had child--seen seizure---------instructed
(8) Hadn't had child--seen seizure---------not instructed

Table 27 presents a breakdown of all of the responses under each set of conditions without regard to the sex of the respondent.

Table 27

Teacher Confidence in Managing a Future Seizure Under Eight Conditions

Condition	N	%	Yes	%	No	%	Uncert.	%
(1).....	119	20.88	91	76.47	1	.84	27	22.69
(2).....	56	9.82	20	35.71	3	5.36	33	58.93
(3).....	80	14.03	49	61.25	4	5.00	27	33.75
(4).....	38	6.66	5	13.16	2	5.26	31	81.58
(5).....	87	15.26	46	52.87	6	6.90	35	40.23
(6).....	169	29.65	34	20.12	35	20.71	100	59.17
(7).....	10	1.75	7	70.00	0		3	30.00
(8).....	11	1.93	4	36.36	3	27.27	4	36.36
Total....	570*	99.98	256	44.61	54	9.47	260	45.61

*Teachers who were uncertain about having had an epileptic child in class were not included in this analysis.

Reading the first column indicates the numbers and percentages who responded under each of the eight conditions. Reading horizontally one can determine the number and percentage who responded each of three ways under a given set of circumstances. The greatest percentages of respondents were in the first or sixth categories, which represent extremes in exposure and knowledge. The sixth condition has the greatest percentages who felt they couldn't manage or who were uncertain, with two important exceptions (those who hadn't had children nor instructions but who had witnessed a seizure, and those who had had children with epilepsy but had neither witnessed a seizure nor had instructions).

Analyses of the answers (yes, no, uncertain) to the question of capability under each of eight conditions were made according to the sex of the respondents. These findings may be seen in Tables 28-29-30.

Table 28

Regular Teachers Who COULD Manage a Seizure Situation Under Several Combinations of Circumstances

Condition	Male(223)		Female(392)	
	N	per cent	N	per cent
(1)	48	21.52	41	10.46
(2)	7	3.14	13	3.32
(3)	25	10.21	23	5.87
(4)	1	.45	4	1.02
(5)	15	6.73	31	7.91
(6)	16	7.17	18	4.59
(7)	3	1.35	4	1.02
(8)	1	.45	3	.77
Total	116	52.05	137	34.95

Table 29

Regular Teachers Who Could NOT Manage a Seizure Situation Under Several Combinations of Circumstances

Condition	Male(223)		Female(392)	
	N	per cent	N	per cent
(1)	1	.45	0	
(2)	2	.90	1	.26
(3)	0		4	1.02
(4)	0		2	.51
(5)	2	.90	4	1.02
(6)	7	3.14	28	7.14
(7)	0		0	
(8)	0		3	.77
Total	12	5.38	42	10.71

Table 30

Regular Teachers Who Were UNCERTAIN About Management of A Seizure Under Eight Conditions

Condition	Male(223)		Female(392)	
	N	per cent	N	per cent
(1)	5	2.24	22	5.61
(2)	14	6.28	19	4.85
(3)	6	2.69	21	5.36
(4)	18	8.07	12	3.06
(5)	5	2.24	30	7.65
(6)	27	12.11	72	18.37
(7)	0		3	.77
(8)	0		4	1.02
Total	75	33.63	183	46.68

It seems clear that men teachers generally feel more capable of managing seizures than women teachers; and, further, greater percentages of women teachers feel that they cannot manage or are uncertain about managing than men teachers. These and other comparisons may be made more readily in the following figure which graphs the percentages according to sex for each of the three responses under the eight conditions which are being considered.

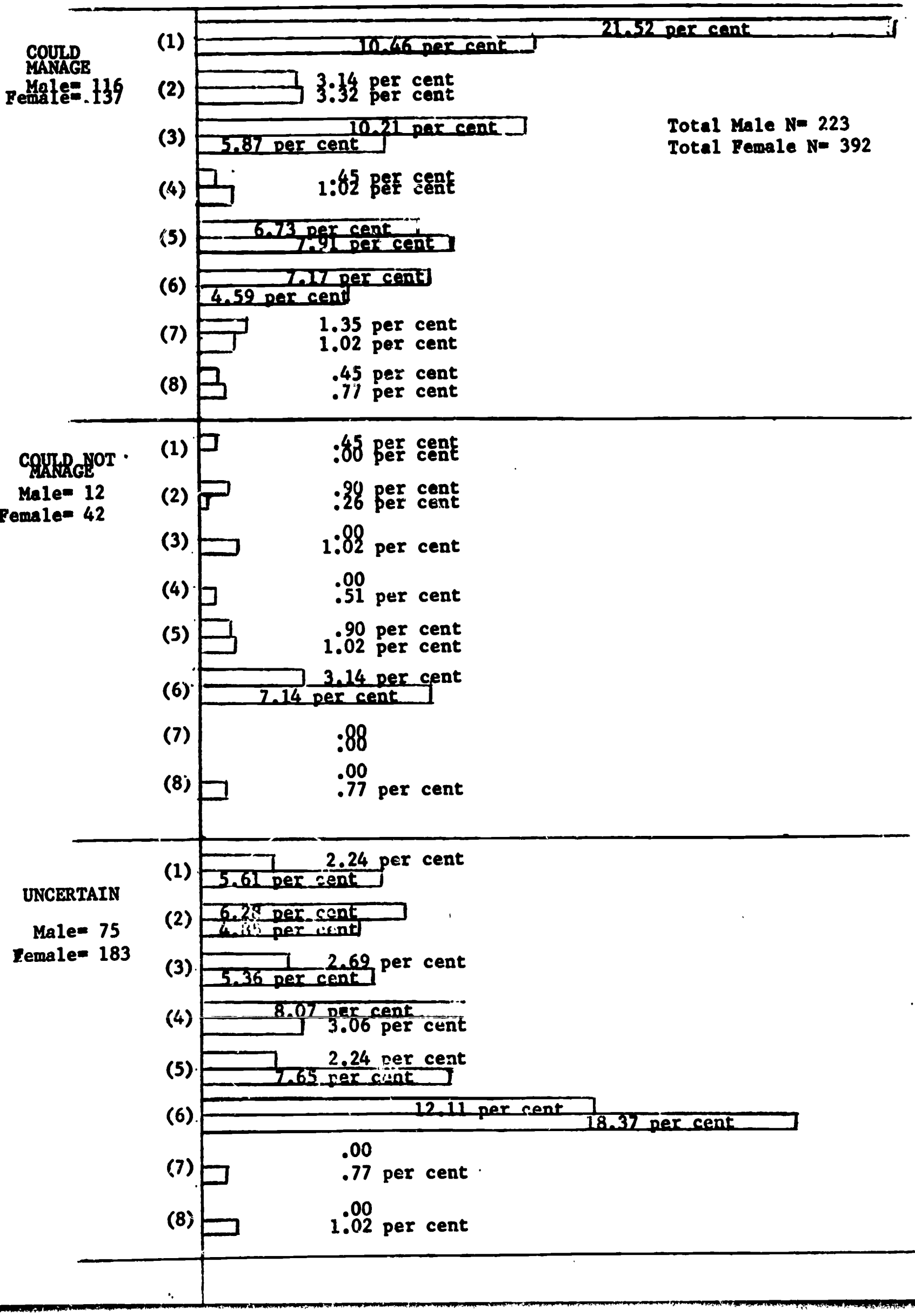
Greatest confidence for both sexes is under the circumstance where respondents were fully instructed and had had experience with both seizures and children with epilepsy. Least confidence and greatest uncertainty for both sexes are under the condition where respondents had no instructions and no experience with seizures or children with epilepsy. However, ther is considerably uncertainty under all four conditions in which a respondent has had contact with known epileptic children but has either not had instruction or has not actually witnessed a seizure. The characteristics of both male and female teachers who felt they could not manage a seizure situation were examined earlier.

The sixth question asked, "Should the teacher be informed if a child is diagnosed as epileptic or having seizures?"

The response to this item was an overwhelming YES! All of the 42 special teachers and 619 of the 622 regular teachers responded affirmatively. These findings were consistent with the unanimity on this point which the investigator found in the pilot study of 39 elementary teachers, in a related study of 156 nuns and lay teachers in parochial schools, and among some 150 education students in the investigator's college classes.

Figure 1

Teacher Confidence in Managing A Future Seizure Under Eight Conditions



What of the three respondents who did not feel teachers should be informed. All three were women, and each may be seen as representative of a different position in the matter. An elementary teacher in her fifth year of service, one had no experience with children with epilepsy, was uncertain about seizure types although she indicated that she had seen a petit mal seizure. She had received no instructions on first aid and felt she could not manage a seizure situation. However, she indicated willingness to have in her class a child under medication whose seizures were controlled and felt that she could work comfortably with such a child.

The second was a junior high teacher with over twenty years experience who indicated uncertainty about experience with an epileptic child, didn't know the seizure types, had not seen a seizure, had received no instructions, felt she couldn't manage a seizure situation, was unwilling to have a youngster with controlled seizures in class, and felt that she couldn't work comfortably with a known epileptic child. Her final comment was a classic, "There are always some people who can be good 'nurses' under stress, but I'm not even a poor patient! When I've had a sick child to take to the nurse -- I'm always asked -- 'Which is the patient?'"

The third was a senior high teacher with almost twenty years of experience who had witnessed seizures and had epileptic children in class, had knowledge and instructions but was uncertain about her ability to manage a seizure. Rather than either a "yes" or "no" to this item she wrote in "uncertain" as her response. She felt that she

could manage a seizure situation and indicated that she could work comfortably with a known epileptic child.

While this item did not have space for comments, fourteen of the regular teachers and five of the special teachers emphasized their choice of an answer by exclamation marks or underlining or circling, or commented about the importance of knowledge on this point.

Originally the seventh question had read, "If you were not required by the administration, would you be willing to have an epileptic child in your class provided his seizures are controlled medically to the point of having no seizures?" As a result of the pilot study and further discussion, the item was amended to read, "Are you willing to have an epileptic child in your class or homeroom provided his seizures are controlled medically to the point of having no seizures?"

A tabulation of the responses, shown in Table 31, indicates that 95 per cent of the regular teachers and 98 per cent of the special teachers in the sample responded affirmatively, which is overwhelmingly in line with present medical opinion about the educational placement of such children.

Table 31

Willingness To Have Child With Perfectly Controlled Seizures

Level	N	Yes	%	No	%	Other	%
Primary	173	165	95.37	4		4	
Intermediate	131	123	93.89	7		1	
Junior high	97	92	94.84	3		2	
Senior high	202	193	95.54	9		0	
Not specified	19	18	94.73	1		0	
Total	622	591	95.02	24	3.86	7	1.12
Special	42	41	97.62	0		1	1.38

Although remarks were not solicited, 31 teachers commented.

Illustrative of the variety are:

(yes)"If I had to, but I'd prefer not to have one."
(yes)"If no seizures as you state and child otherwise appears normal."
(yes)"If they are absolutely controlled and the parents cooperate and see that the medication is regularly taken so that seizures never occur."
(yes)"Is there a choice?"
(yes)"Makes no difference to me."
(yes)"I have now."

(no)"Not in woodshop."
(no)"Home room, yes, not in machine - woodworking class."

(uncertain)"Do not know enough about this to have an opinion."
(uncertain)"I have had some, but don't like it--but always do anything I can."

All of the "other" comments centered on uncertainty. A closer look at the 24 respondents who replied negatively reveals the following characteristics:

eleven of 24 were men
nine of 24 had had children with epilepsy in class
five of 24 knew the difference between petit and grand mal
ten of 24 had actually witnessed seizures
six of 24 had received first aid instructions
three of 24 felt they could manage a seizure
(14 were uncertain; 7 could not)

What are the characteristics of those who replied affirmatively? Table 32 shows the distribution of those who would be willing to have a child with well controlled seizures in relationship to previous experience with children known to be epileptic.

Table 32

Prior Experience With Epileptic Children of Teachers Willing to Have Children in Class with Well-Controlled Seizures

Level	N	Yes		No		Uncertain	
		N	%	N	%	N	%
Primary.....	165	56	33.94	96	58.18	13	7.88
Intermediate...	123	40	32.52	74	60.16	9	7.32
Junior high....	92	55	59.78	29	31.52	8	8.69
Senior high....	193	121	62.69	54	27.98	18	9.33
Not specified..	18	11	77.77	7	22.23	0	
Total.....	591	283	47.88	260	43.99	48	8.12
Special.....	41	36	87.80	5	12.20	0	

Perhaps the most striking finding is the proportion of elementary teachers who are willing to have a child with well controlled seizures who reported no prior experience with children known to be epileptic. These findings are in contrast to those for secondary teachers where the numbers conceivably reflect a favorable experience with such children. However, another pertinent factor is actual experience with seizures. These findings may be seen in Table 33.

Table 33

Experience With Seizures of Teachers Willing To Have Children in Class with Well-Controlled Seizures

Level	N	None		Some kind of seizure	
		N	%	N	%
Primary.....	165	120	72.73	45	27.27
Intermediate...	123	90	73.17	33	26.83
Junior high....	92	51	55.43	41	44.57
Senior high....	193	121	62.69	72	37.31
Not specified..	18	13	72.22	5	27.78
Total.....	591	395	66.84	196	33.16
Special.....	41	8	19.51	33	80.49

While a majority of special class teachers reported experience with actual seizures, a majority of regular teachers had not witnessed a seizure, again with higher percentages at the two elementary levels. If perfect control is explicitly assumed for a child, elementary teachers may be better able than secondary teachers to accept the normality of the child without regard to prior experiences they may have had with <u>other</u> epileptic children.

How are responses related to the two variables, experience with epileptic <u>children</u> and experiences with <u>seizures</u>? These findings are shown in Table 34.

Table 34

Experience with Seizures(3) and with Epileptic Children(1) of Teachers Willing To Have Children in Class With Well-controlled Seizures

Level	N	yes(1) yes(3) N	yes(1) no(3) N	no(1) no(3) N	no(1) yes(3) N	Other N
Primary.....	165	29	25	87	11	13
Intermediate.....	123	26	14	71	3	9
Junior high.....	92	38	19	26	1	8
Senior high.....	193	69	52	52	2	18
Other.....	18	6	5	5	2	0
Total.....	591	168	115	241	19	48
per cent.....	100.0	28.43	19.46	40.78	3.21	8.12

While the greatest percentage(40.78) had had neither experience with seizures nor with epileptic children, the percentages who had had experience with children(28.43 and 19.46), with or without seizures, were greater. As one might expect, the lowest percentage willing to have a child with

well controlled seizures was made up of those who had witnessed a seizure without having had experience with a known epileptic child. The possible adverse effect of such an experience seems quite apparent.

One might also ask, what is the relationship of a favorable response to having a child with good control to capability for managing a seizure if one were to occur? Table 35 shows these findings.

Table 35

Reported Capability for Managing a Seizure Among Teachers Willing To Have Children in Class with Well-Controlled Seizures

Level	N	Yes		No		Uncertain	
		N	%	N	%	N	%
Primary.....	165	65	39.39	23	13.94	77	46.67
Intermediate.....	123	61	49.59	11	8.94	51	41.46
Junior high.....	92	44	47.83	8	8.69	40	43.48
Senior high.....	193	97	50.26	11	5.70	85	44.04
Unspecified.....	18	7	38.88	2	11.12	9	50.00
Total.....	591	274	46.37	55	9.30	262	44.33

These percentages approximate those for the fifth question alone (see Table 21). It might be argued that, in responding to the seventh item, teachers are responding to the situation as described without regard to the possibility of a seizure because there is absolutely no way of determining what the possibility of a seizure might be under the circumstances described. Teachers well might be expected to behave along the lines considered in analyzing the fifth question.

The eighth and tenth questions center on two of the fallacies most frequently encountered in discussing the effects of epilepsy upon the person with the condition. One fallacy insists that persons with epilepsy are strange and maladjusted, have a special kind of personality, and that these difficulties stem directly from the condition. The truth is that a majority of persons with epilepsy are more normal in their adjustments than many people dare to believe. For the majority, medication controls seizures to the point where they are essentially normal in every respect. However, the label "epilepsy" may cause others to respond in variable and often negative fashion to this person; and the person with epilepsy wonders what is the matter with him. Thus, maladjustment may be encountered when it results from the attitudes and acceptance of teachers, parents, and peers rather than being dependent upon the condition per se. The eighth question asked, "Do you feel that children with epilepsy are likely to have adjustment problems related to their condition?" The basic findings are reported in the following table.

Table 36

Persons With Epilepsy and Adjustment Problems

Level	N	Yes	%	No	%	Other	%	No ans.
Primary.....	173	140	80.92	19	10.98	11	6.36	3
Intermediate....	131	100	76.33	26	19.85	2	1.53	3
Junior high	97	73	75.26	15	15.46	9	9.28	0
Senior high.....	202	148	73.27	28	13.86	20	9.90	6
Unspecified.....	19	14	73.68	4	21.05	1	5.26	0
Total.....	610*	475	77.87	92	15.08	43	7.05	12
Special.....	42	37	88.09	5	11.91	0		0

*The twelve who didn't respond were subtracted.

The way the question is worded makes it impossible to know if respondents felt the great amount of adjustment difficulties stemmed directly from the condition or from the dynamics surrounding and related to the condition. The findings, however, are clear. Three-fourths of the regular teachers and nearly 90 per cent of the special teachers felt that adjustment problems would exist.

While no space on the questionnaire existed to indicate an uncertain response and comments were not solicited, 43(7 per cent) persons made some "other" response and twelve omitted the item entirely. In addition, 26(5.5 per cent) "yes" respondents and 12(13 per cent) "no" respondents also commented. An analysis of the 81 comments reveals that the majority fall chiefly into three categories (a) "uncertainty"--37, (b) "it depends"--18, and (c) "I don't know"--10. Few reflected with any clarity the false notion with which the investigator was concerned such as: "yes--naturally!", or "Many students do not know what the situation is and feel child is odd, queer, etc. 'Fits' is general term I've heard," or "Yes, I would suppose so."

On the other hand, one primary teacher commented, "If a child was made to feel he was different from the other children by his parents or other adults, then I believe he would have adjustment problems. But in this age more people are realizing that people with epilepsy are not different." Another commented, "Some are adjusted--some aren't. Problems may be due to other things, not the epilepsy."

How did teachers who reported experience with epileptic children respond to this question about adjustment? The findings may be seen in Table 37. A great majority(82 per cent) of regular teachers who had had experience with epileptic children felt they would have adjustment problems and an even greater proportion of the special teachers (86.5 per cent). A slightly higher proportion (86 per cent) of the regular teachers who had <u>not</u> had experience felt they would have adjustment problems. While one might speculate about the possible stereotypes operating for those who had not had experience, no ready explanation is available for the great proportion of affirmative responses among those who reported contact with epileptic children.

Table 37

Teachers' Feelings About Adjustment Problems and Experience with Children Who Are Epileptic

Experience with Epilepsy	N	Adjustment problems Yes	%	No	%
Regular teachers					
Yes.....	264	217	82.20	47	17.80
No.....	258	222	86.05	36	13.95
Special teachers					
Yes.....	37	32	86.50	5	13.50
No.....	5	5	100.00	0	

Likewise, the percentages who had actually witnessed seizures and felt that these children would have adjustment problems were again nearly equal to those who had not had such experience but felt similarly. These findings may be seen in Table 38.

Table 38

Feelings About Adjustment Problems Among
Teachers Who Had Witnessed Seizures

Witnessed Seizures	N	Adjustment Problems			
		Yes	%	No	%
Regular teachers					
Yes.....	196	166	84.69	30	15.31
No.....	370	309	83.51	61	16.49
Special teachers					
Yes.....	34	30	88.23	4	11.76
No.....	8	7	87.50	1	12.50

All but two of the 30 special teachers who felt there would be adjustment problems had both witnessed seizures and had epileptic children in class. All four of the special teachers who felt there would not be adjustment problems had also had these children in class and had witnessed seizures.

Since the tenth question also attempted to get at a general attitude toward the relationship of seizures to intellect, it is considered next. The question asked, "Do you think children with epilepsy are likely to be less able intellectually because of their seizures?"

The fallacy is that seizures cause intellectual deterioration or mental retardation. The fact is that the agent which causes one may cause the other, BUT NOT NECESSARILY. Thus, a majority of children who are epileptic are perfectly normal intellectually, or their intellectual ability runs the broad range as it does for any other normal population. In classes for crippled children there may be more children with epilepsy than one finds in the general population because the conditions

which produce cerebral palsy also produce seizures in about one of every three cases. Similarly, in classes for mentally retarded children there will be those whose intellectual retardation is the result of brain injury. Where there is brain injury there may be epilepsy, but not in every case. The basic findings on the question of intellectual ability appear in Table 39.

Table 39

Teachers' Feelings About Intellectual Retardation Among Epileptic Children

Level	N	Yes	%	No	%	Uncert.	%	No ans.
Primary.....	173	7	4.19	144	86.23	16	9.58	6
Intermediate...	131	10	7.75	117	90.70	2	1.55	2
Junior high....	97	8	8.33	80	83.33	8	8.33	1
Senior high....	202	16	7.96	170	84.58	15	7.46	1
Not known.....	19	3	16.7	14	77.80	1	5.50	1
Total.....	622	44	7.20	525	85.9[illegible]	42	6.87	11
Special.....	42	12	29.27	27	65.85	2	4.88	1

It may be readily seen that only a small number (44=7.2 per cent) of the regular teachers felt that intellectual retardation would be present while a nearly identifical number (42=6.87 per cent) were uncertain and wrote in "uncertain" or commented to this effect. Undoubtedly, the special teachers, who had more experience with educational and intellectual retardation, responded in those terms rather than in terms of the relationship of the seizures to intellectual ability.

Regular teachers' experience with epileptic children also could conceivably operate as a factor in responding to this question. Table 40 shows this relationship.

Table 40

Teachers' Experience with Epileptic Children and Views on Intellectual Retardation

Regular teachers' Experience with Epilepsy	Intellectual Retardation			
	Yes	%	No	%
Yes.....	22	4.21	240	45.98
No.....	17	3.26	243	46.55
(Total N = 522)				

Almost equal numbers with and without experience with epileptic children expressed themselves about intellectual ability; responses were almost identical in their proportions of ten to one that these children would not be affected intellectually by their seizures.

Similar to the eighth question there was no specific space for an uncertain response and comments were not solicited. However, 72(11.8 per cent) of the regular teachers made comments as did 12(28.6 per cent) of the special teachers. Further, the patterns of comments were quite different. The great majority of comments centered on "uncertainty"--45; there were nine illustrations of particular persons either affected adversely (four) or not affected (five). Twelve(16.7 per cent) of the regular teachers who commented and ten (83 per cent) of the special teachers remarked about specific gaps in learning due to petit mal seizures, degree of control or the effects of excessive medication on

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One might also ask how the replies about intellectual ability were influenced by contact with epileptic children. These findings appear in Table 42.

Table 42

Regular Teachers' Opinions About Intellectual Retardation in Relation to Exposure to Epileptic Children(1) and Opinions About Adjustment Problems

Intellectual Retardation	N	Yes(1) Yes(8)		Yes(1) No(8)		No(1) No(8)		No(1) Yes(8)		Other	
		N	%	N	%	N	%	N	%	N	%
Yes.....	44	20	45.25	1	2.27	1	2.27	16	36.36	6	13.64
No.....	525	172	32.76	45	8.57	35	6.67	195	37.14	78	14.86

The greatest proportion (45.25 per cent) of those who felt epileptic children would be less able intellectually reported experience with epileptic children and felt they would have adjustment problems, too.

Of those who felt epileptic children would not have intellectual difficulties, the great majority (69.90 per cent) felt they would have adjustment problems; but the split was nearly equal between those who reported some experience with epileptic children and those who reported none. The numbers who felt there would be normal intellect and no adjustment problems again were split almost equally between those with and without exposure to epileptic children. The strongest notion which appears is that adjustment problems are likely to exist regardless of the combination of circumstances.

The ninth question referred to the fact of medication, and respondents had to make an inference about degree of control. Thus it differs somewhat from the seventh question which asked about working with a child where perfect control was assumed. The ninth question read, "Could you work comfortably in your class or homeroom with a child who is known to be under medication for seizures?"

The fact is that the great majority of these children are completely controlled or improved to the point of being essentially normal when they take their pills regularly; they should be in regular classrooms. Hence, a realistic teacher's concern might center on the child's taking his pills in school when he should, if his medication schedule calls for it. The basic findings according to the sex of respondents appears in Table 43.

Table 43

Teachers Could Work Comfortably With Child Known To Be Under Medication

Level	N	Yes		No		Other		No ans.
		M	F	M	F	M	F	
Primary.....	173	2	151	0	8	0	9	3
Intermediate..	131	30	86	2	7	1	2	3
Junior high...	97	44	46	4	1	0	2	0
Senior high...	202	125(3?)	58	5	2	3	4	2
Unspecified...	19	5(4?)	8	1	1	0	0	0
	622	206(7?)	349	12	19	4	17	8
Total.....		562		31		21		
per cent		91.53		5.05		3.42		
Special.....	42	8	34					
Total.....		42						
per cent		100.00						

Relative percentages may be seen better in the following table.

Table 44

Sex of Teachers and Ability To Work Comfortably With Child Known To Be Under Medication

	N	Yes	%	No	%	Other	%
Regular teachers							
Female.....	385	349	90.65	19	4.94	17	4.42
Male.....	222	206	92.80	12	5.41	4	1.80
Sex unknown.....	7	7		0		0	
Total.....	614*	562	91.53	31	5.05	21	3.42
Special teachers							
Female.....	34	34	100.00				
Male..	8	8	100.00				

*Eight regular teachers didn't respond to Question 9.

The great majority of regular teachers and all of the special teachers felt they could work comfortably with a child known to be under medication. However, these figures were decreased slightly from those who would be willing to have a child with perfectly controlled seizures while the figures for those who are unwilling to have a child under medication or gave some other comment are increased (see Table 31, p. 46).

What traits, if any, do those respondents who said "no" have in common? Twelve(5.38 per cent of total Male N) were men, and nineteen (3.83 per cent of total female N) were women. In addition:

21 of 31 reported no or uncertain experience with epileptic children
25 of 31 didn't know or were uncertain of the difference between a petit mal and grand mal seizure

21 of 31 had not witnessed a seizure
20 of 31 had received no instructions about first aid for seizures
3 of 31 felt they could manage a seizure
6 of 31 felt they could not manage a seizure
22 of 31 were uncertain about ability to manage a seizure

While sixteen of the 31 were willing to have a child in class with well controlled seizures, twelve were unwilling; and three gave qualified statements. These regular teachers varied greatly in experience from first year in teaching to 42 years of experience in this school system with a median of 17 years and a mean of 16.97 years of teaching experience.

Several factors would seem to be operating. Table 45 shows the relationship of experience with epileptic children to working with a child known to be under medication.

Table 45

Experience With Epileptic Children and Ability to Work Comfortably With Child Known To Be Under Medication

Regular Teachers' Experience with Epilepsy	N	Work with Child Under Medication: Yes	%	No	%
Yes.....	281	272	50.09	9	1.66
No.....	262	246	45.30	16	2.95
	543	518		25	

Almost all of the teachers(272 of 281 = 96.8 per cent) who had had some experience with epileptic children felt they could work comfortably with a child known to be under medication. However, nearly as

many (246 of 262 = 93.89 per cent) who reported no such experience felt equally confident. What of the relationship to having actually witnessed a seizure? Table 46 presents this evidence.

Table 46

Teachers' Witnessing of Seizure and Ability To Work Comfortably With Child Known To Be Under Medication

Witnessed Seizures	N	Work With Child Under Medication: Yes	%	No	%
Yes.....	198	192	32.82	6	1.03
No.....	387	364	62.22	23	3.93
	585	556		29	

Again, almost all of the teachers(192 of 198 = 96.89 per cent) who had witnessed seizures felt they could work comfortably with a child known to be under medication. However, while the percentage was nearly the same (364 of 387 = 94.06 per cent) of teachers who had not witnessed seizures but felt they could work with a child under medication, they represented a far greater proportion of the teachers responding to these two items.

What of the relationship between working comfortably with a child known to be under medication and ability to manage a seizure if one were to occur? Findings relevant to this question appear in Table 47.

Table 47

Teachers' Ability To Manage Seizure Situation and Ability To Work Comfortably With Child Known To Be Under Medication

Ability To Manage Seizure Situation	N	Work With Child Under Medication			
		Yes	%	No	%
Yes.....	273	270	82.07	3	.91
No.....	56	50	15.20	6	1.82
	329	320		9	

While the proportion of teachers who could work comfortably with a known epileptic child and felt capable of managing a seizure situation might be expected, it is rather surprising to note the numbers who could work comfortably with a child under medication but who felt they could not manage a seizure situation. Since the probability of a seizure certainly cannot be predicted from the single fact that a child is known to be under medication, interpretation to these teachers of the possibilities of a seizure occurring and what they might do seems imperative. Further analysis revealed that 40 of these 50 teachers reported that they had received no instructions about first aid procedures while the other ten had received instructions but still felt incapable of managing. These and other findings on management and instructions may be seen in Table 48.

Table 48

Teachers Who Could Work Comfortably With Child Known To Be Under Medication (N=562) in Relation To Ability To Manage A Seizure(5) and Instructions on First Aid(4)

Level	N	Yes(5) Yes(4) N	No(5) Yes(4) N	No(5) No(4) N	Yes(5) No(4) N	Uncertain(5) Yes(4) N	Uncertain(5) No(4) N
Primary.....	153	38	2	16	27	23	47
Intermediate.....	116	39	3	8	19	12	35
Junior high.....	90	35	3	6	9	17	20
Senior high.....	186	77	1	9	19	30	50
Other.....	17	7	1	1	0	0	2
Total.....	562	196	10	40	74	82	160
per cent.....		34.87	1.78	7.12	13.17	14.59	28.47

The greatest proportion of those who felt they could work comfortably with a child under medication felt capable of managing a seizure situation and had received instructions on first aid procedures. While the dynamics of the relationship are far from clear, it can be plainly seen that the numbers who could work with a child under medication but who were uncertain about managing a seizure are markedly higher for those who had received first aid instructions than for those who had not. However, it is again striking to note the numbers (74) who felt they could manage a seizure situation but who reported that they had received no instructions on first aid procedures for such an event.

Table 49 gives findings on the relationship of two other variables, (1) having had experience with an epileptic child and (2) having witnessed a seizure, to (3) the feeling that a teacher could work comfortably with a child known to be under medication.

Table 49

Teachers Who Could Work Comfortably With Child Known To Be Under Medication (N=562) in Relation to Experience With Epileptic Children(1) and Having Witnessed a Seizure(3)

Level	N	Yes(3) Yes(1) N	No(3) Yes(1) N	No(3) No(1) N	Yes(3) No(1) N	Other(1) N
Primary.....	153	29	23	79	11	11
Intermediate.....	116	25	14	66	3	8
Junior high.....	90	37	18	27	1	7
Senior high.....	186	67	49	50	3	17
Unspecified.....	17	5	5	4	2	1
Total.....	562	163	109	226	20	44
per cent.....		29.00	19.39	40.21	3.56	7.83

The greatest proportion had neither had epileptic children nor witnessed a seizure. However, of those who reported experience with epileptic children nearly 60 per cent had actually witnessed seizures. Again it could be inferred that experience with children and seizures might have a favorable effect on a teacher's willingness to work with a child known to be under medication, but this is only speculation.

In the following table another relationship may be examined, that between (1) having witnessed a seizure and (2) ability to manage a seizure situation, to (3) the feeling that a teacher could work comfortably with a child known to be under medication for seizures.

Table 50

Teachers Who Could Work Comfortably With Child Known To Be Under Medication(N=562) in Relation To Having Witnessed a Seizure(3) and Ability To Manage A Seizure Situation(5)

Level	N	Yes(5) Yes(3) N	No(5) Yes(3) N	No(5) No(3) N	Yes(5) No(3) N	Uncertain(5) Yes(3) N	Uncertain(5) No(3) N
Primary.....	153	26	1	39	17	17	53
Intermediate.....	116	21	2	37	9	8	39
Junior high.....	90	24	2	7	20	14	23
Senior high.....	186	50	1	9	46	20	60
Unspecified.....	17	4	1	3	1	2	6
Total.....	562	125	7	95	93	61	181
per cent.....		22.24	1.25	16.90	16.55	10.85	32.21

The greatest proportion were those who felt comfortable in working with a child under medication but who had not witnessed a seizure and were uncertain about ability to manage a seizure situation. Presumably, having witnessed a seizure had no adverse effect for the 125 teachers who felt they could manage a seizure while it seems conceivable that having seen a seizure had a negative effect for those seven teachers who felt they could not manage a seizure. Interestingly, the proportions are almost equal for those who had not seen a seizure but who felt they either could or could not manage a seizure situation.

Findings on two other points appear relevant here. Of those who responded affirmatively to Question 9 and affirmatively or negatively to Questions 1 and 3, how many had received first aid instructions? And one step farther--of those who responded affirmatively to Question 9 and negatively or affirmatively to Questions 1, 3, and 4, how did they respond to Question 5?

These conditions are exactly the same as those delineated in an earlier analysis of Question 5(see pp.40-43) but start from the premise of an affirmative answer to Question 9--could work comfortably with a child known to be under medication. The findings on these several relationships are presented in the following chart with little effort at interpretation. The relationship between receipt of first aid instructions and the ability to manage a seizure in a child known to be under medication, particularly where a teacher has had an epileptic child and/or witnessed a seizure, seems crystal clear. On the other hand, first aid instructions without experience with an epileptic child would seem to be of uncertain value for future confidence as would witnessing an unexpected seizure with or without first aid instruction.

Nearly equal numbers at the extremes of the "tree" prompted a closer look at their comparative characteristics. The four groups under consideration have been designated A-B-C-D:

A = Those 89 cases who responded yes to all five items.

B = Those 91 cases who responded yes to (9), no to (1)-(3)-(4) and uncertain to (5).

C = Those 23 cases who responded yes to four items, but were uncertain about (5).

D = Those 28 cases who responded yes to (9) but NO on the other four questions.

An analysis of subject characteristics for these four groups of regular teachers appears in Table 51.

Figure 2

Relationship of Responses to Five Questions About Epilepsy

(9) could work child under medication	(1) had children with epilepsy in class	(3) had witnessed a seizure	(4) had received first aid instructions	(5) could manage a seizure situation	
Yes-516*	Yes- 271	Yes- 162	Yes- 113	Yes--------	89
				No---------	1
				Uncertain--	23
			No-- 49	Yes--------	19
				No---------	3
				Uncertain--	27
		No-- 109	Yes- 76	Yes--------	48
				No---------	4
				Uncertain--	24
			No-- 33	Yes--------	5
				No---------	1
				Uncertain--	27
	No-- 245	Yes- 19	Yes- 9	Yes--------	6
				No---------	0
				Uncertain--	3
			No-- 10	Yes--------	4
				No---------	2
				Uncertain--	4
		No-- 226	Yes- 74	Yes--------	44
				No---------	5
				Uncertain--	25
			No- 152	Yes--------	33
				No---------	28
				Uncertain--	91

*516 of 562 who responded affirmatively--Those removed from analysis were uncertain on Question 1 or had omitted responses to other items under consideration.

Table 51

Subject Characteristics for Four Groups of Regular Teachers

Level	Male MaleN	%	Female Fe N	%
Group A (N=89)				
Prim...	0		12/171	7.02
Int....	4/34	11.76	9/96	9.37
Jr.....	14/48	29.17	5/49	10.20
Sr.....	29/133	21.80	11/66	16.67
Unspec.	1/6	16.67	1/9	11.11
Total*	48/223	21.52	38/391	9.72
Mean exp.	17.75 yrs.		20.79 yrs.	
*plus 3-sex not known				
Group B (N=91)				
Prim...	1/2	50.00	35/171	20.47
Int....	5/34	14.71	18/96	18.75
Jr.....	2/48	4.17	4/49	8.16
Sr.....	17/133	12.78	6/66	9.09
Unspec.	0/6	00.00	2/9	22.22
Total*	25/223	11.21	65/391	16.62
Mean exp.	8.24 yrs.		9.72 yrs.	
*plus 1-sex not known				
Group C (N=23)				
Prim...	0		5/171	2.92
Int....	1/34	2.94	3/96	3.12
Jr.....	0		6/49	12.24
Sr.....	3/133	2.26	5/66	7.57
Total	4/223	1.79	19/391	4.86
Mean exp.	9.5 yrs.		24.26 yrs.	
Group D (N=28)				
Prim...	0		12/171	7.02
Int....	1/34	2.94	5/96	5.21
Jr.....	2/48	4.17	2/49	4.08
Sr.....	3/133	2.26	3/66	4.55
Total	6/223	2.69	22/391	5.63
Mean exp.	10.25 yrs.*		11.3 yrs.	
*for four cases with less than 15 yrs. experience--two others had over 40 yrs. of experience				

In an attempt to assess teachers' perceptions of the possible effect of a seizure or the presence of an epileptic child on the other children in a regular classroom, the following questions were asked. What effect do you think the occurrence of a grand mal seizure in class would have on other children? What effect do you think the presence of a known epileptic child would have on other children in your classroom or homeroom?

Four alternatives were given respondents to check: None--Adverse--Favorable--Uncertain. These are quite arbitrary, and it should be readily appearent that any response depends on the many possible variables which operated in earlier questions but which are far from clear in the statement of these two questions. While the investigator might hope that a grand mal seizure could be managed with enough skill to have little or no effect on spectators, it seems logical that "uncertain" is the most reasonable expectation for response to this item. However, the presence of a known epileptic child should have little or no effect on the other children if the teacher's attitude is "right". That the eleventh question was perhaps rather difficult is seen from the fact that twenty-two of the regular teachers and one special teacher either commented or omitted the item rather than respond by checking any of the alternatives presented with the question. The findings are to be seen in Table 52.

Table 52

Possible Effect Of A Grand Mal Seizure On Other Children In Class

		None		Adverse		Favorable		Uncertain		Omit
Level	N	N	%	N	%	N	%	N	%	N
Primary.....	173	6	3.61	39	23.49	3	1.81	118	71.08	7
Intermediate...	131	12	9.45	28	22.05	4	3.15	83	65.35	4
Junior high....	97	7	7.45	23	24.47	5	5.32	59	62.77	3
Senior high....	202	24	12.37	40	20.62	7	3.61	123	63.40	8
Unspecified....	19	2	10.53	8	42.10	0	0	9	47.37	0
Total.....	600*	51	8.50	138	23.00	19	3.17	392	65.33	22
Special.....	41**	9	21.95	12	29.27	0		20	48.78	1

*plus 22 who omitted this item
**plus one who omitted this item

It is interesting that a greater percentage of special class teachers than regular teachers feel that a seizure might have a negative effect on the other children. However, it is also noteworthy to see that a much greater proportion of special teachers feel that a seizure might have no effect. About half of the special teachers are uncertain of the effect while over two-thirds of the regular teachers are uncertain on this point.

The findings on the twelfth question are presented in Table 53. The responses were shifted over considerably in the direction which the investigator predicted.

Table 53

Possible Effect of the Presence of a Known Epileptic Child on Other Children in Class

Level	N	None N	None %	Adverse N	Adverse %	Favorable N	Favorable %	Uncertain N	Uncertain %	Omit N
Primary.....	173	56	33.53	6	3.59	6	3.59	99	59.28	6
Intermediate...	131	47	37.01	7	5.51	9	7.09	64	50.39	4
Junior high....	97	36	37.5	6	6.25	7	7.29	47	48.96	1
Senior high....	202	108	54.54	6	3.03	5	2.52	79	39.90	4
Unspecified....	19	9	47.37	1	5.26	1	5.26	8	42.10	0
Total.....	607*	256	42.17	26	4.28	28	4.61	297	48.93	15
Special.....	41**	24	58.54	2	4.88	3	7.32	12	29.27	1

*Plus fifteen who omitted this item.

**Plus one who omitted this item.

In responding to the eleventh question 103 (16.56 per cent) of the regular teachers commented or qualified answers while 16 (39 per cent) of the special teachers commented. A majority of statements from

both groups centered on three main points, (1) the importance of the teacher's attitude and management of such a situation, (2) the need for discussion-interpretation with the class either before or after a seizure, and (3) the possible-disruption-fright-alarm-distress which could occur, particularly if the seizure is a first time event and totally unexpected. The special class teachers indicated rather generally that their children were likely to become conditioned to seizures through experience with epileptic classmates! Interestingly, several teachers of younger children mentioned the possible adverse effect on older children while some high school teachers commented about the negative effects on younger children.

Following are several representative comments:

uncertain-primary teacher-"Depends on how it was previously been explained and presented to them(at the time-excitement and shock and astonishment at the first one.)"

uncertain-primary teacher-"I think children react to the way a teacher handles situations usually. Most children would be curious, some might be upset but if explained they would accept it."

intermediate teacher-". . . would depend on how the teacher reacted to the seizure and to the child and also how the class was prepared. It is also hard to determine the effect when one class can differ completely from another. If there are many highly emotional children in a class, the effect could be harmful. In another situation it might help children to learn responsibility and understanding.

favorable-intermediate teacher-"If discussed with them--class expected it and accepted it beautifully."

junior high teacher-"I only pray it won't happen."

junior high teacher-"The first time it would be an adverse effect. I would then talk to the class and explain the condition, from then on I would expect a favorable effect."

uncertain-junior high teacher-"It would depend upon whether the children were informed about it or not. Children can be very helpful when they understand problems. Just how a teacher would get this information to a classroom of students including the epileptic, I don't know!"

favorable-senior high teacher-"Overwhelmingly, they assume an attitude of sympathy and want to help."

adverse-senior high teacher-"It frightens them at first, but they seem sympathetic after one has taken place."

none-special teacher-"After a seizure or two, children treat it as a matter of course--mine did, anyway!"

uncertain-special teacher-"It would depend on the preparation of the students for this possibility and on the individual's empathy."

When responding to the twelfth question, fewer teachers commented than had qualified answers to the eleventh question. Of the regular teachers, 67 (11.03 per cent) commented while nine (21.42 per cent) of the special teachers commented.

A majority of the qualifying statements centered on the characteristics of the epileptic child, the importance of the teacher's attitudes, or the characteristics and composition of a particular class. Several commented about the importance of discussion-interpretation, and there was some evidence of concern for a possible seizure which may, in fact, reflect a halo effect from consideration of the preceding question.

After the twelfth and final question there was a five-inch space with the following directions:

YOU MAY MAKE ANY COMMENTS OR SUGGESTIONS IN THIS SPACE

Ten (23.80 per cent) of the special teachers made further remarks as did 76 (12.26 per cent) of the reular teachers. A majority of these remarks constituted clarification of responses to the eleventh and twelfth items or the items about first aid procedures or the importance of teacher awareness of the presence in class of a child under medication. Eighteen of the regular teachers commented about specific experiences with epileptic children or adults while eleven commented on the need for greater public or personal knowledge on the entire subject. The following comments are far from representative, but do suggest the range of attitudes encountered in he present study:

> "If children are correctly informed about an epileptic they will, in most cases, adjust to the situation. To hide anything or to make something appear abnormal, the children will sense this and treat it as such. Most children and adults fear or dislike things they know little about or have an incorrect notion or ideas about. Many things could be done to create an atmosphere of understanding and consideration toward the epileptic child, instead of pity, fear, and dislike."

> "Ideally, the epileptic child should not be singled out-- However, they are apt to be if the teacher is not trained to handle the situation if it arises. I do hope they can be educated in regular classrooms with a minimum of concern or <u>fuss</u> made about them."

> "Why is this so important an issue?--Are there not more important areas to be studied--or do we have all the other answers?--Are we isolating all and everything unsightly that nature creates?"

> "This type of study is very worthwhile. We classroom teachers are poorly prepared to deal with this problem. By the grace of God I have never had to deal with it directly. It's about time I am getting the help of experts who know how to face the problem. Good luck."

> "Children today seem to accept these health conditions as part of being with people. No doubt some children would be upset by to witness a grand mal seizure in his group, but other situations could be as upsetting."

> "I feel instructions in the handling of epilepsy is something all teachers should know about and what you can do to bring this information to us would be a great help. I have taken first aid courses and nothing has ever been mentioned as to the handling of seizures."

From the presentation of the findings, the analyses of the data, and the discussion of the results it is perhaps apparent that the condition of epilepsy among school children is more frequent than is often supposed, that stereotypes and misconceptions about epilepsy and the person who is epileptic still exist, and that teachers' information about such children and their condition is often sketchy and attitudes toward such children highly variable and often not based on modern medical and psychological knowledge.

Thus, the task of public education and teacher education seems clear. The general public must become much better informed about this condition and quit behaving in the light of superstitions and misconceptions which still survive from an earlier day. This is no less true for that group of citizens called teachers!

Most children under medication for epileptiform seizures are essentially normal children and should be allowed or expected to perform as normal children in school. Each child with epilepsy must be respected and accepted equally as are other children in a teacher's room. Teachers should not only be aware of the presence of an epileptic child but should also be fully informed about what his presence means realistically and operationally. All teachers should examine and reexamine their own attitudes and become fully convinced of the importance of their right attitude toward this child, should learn of the improbability of a seizure in school and its possible course(should one occur), and more clearly understand the importance of interpreting this "difference" fully, correctly, and dispassionately to all children in the light of modern medical and psychological knowledge.

QUESTIONNAIRE FOR TEACHERS

Size of class or homeroom _____

Years taught in this system _____

Elementary _____
(please specify grade level)

Sex of Teacher _____

Total years in teaching _____

Secondary homeroom _____
(please specify grade level)

Other _____
(please specify type and level)

---

1. In your previous teaching experience, have you had any children with epilepsy in your classroom or homeroom?

   Yes _____ No _____ Uncertain _____

2. Do you know the difference between a grand mal and a petit mal seizure?

   Yes _____ No _____ Uncertain _____

3. In your teaching experience, have you witnessed any seizures?

   None _____ Grand mal _____ Petit mal _____ Other or unspecified type _____

4. Have you ever had instructions on how to manage the situation if a child has a seizure in your classroom or homeroom?

   Yes _____ No _____
   If yes, under what circumstances and when?

5. Do you feel you could manage the situation if a child were to have a seizure in your classroom or in a student gathering?

   Yes _____ No _____ Uncertain _____

6. Should the teacher be informed if a child is diagnosed as epileptic or having seizures?

   Yes _____ No _____

7. Are you willing to have an epileptic child in your class or homeroom provided his seizures are controlled medically to the point of having no seizures?

   Yes _____ No _____

over over over

8. Do you feel that children with epilepsy are likely to have adjustment problems related to their condition?

Yes _____ No _____

9. Could you work comfortably in your class or homeroom with a child who is known to be under medication for seizures?

Yes _____ No _____

10. Do you think children with epilepsy are likely to be less able intellectually because of their seizures?

Yes _____ No _____

11. What effect do you think the occurrence of a grand mal seizure in class would have on other children?

None _____ Adverse _____ Favorable _____ Uncertain _____

12. What effect do you think the presence of a known epileptic child would have on other children in your classroom or homeroom?

None _____ Adverse _____ Favorable _____ Uncertain _____

YOU MAY MAKE ANY COMMENTS OR SUGGESTIONS IN THIS SPACE

UNIVERSITY OF *Minnesota*

COLLEGE OF EDUCATION
DEPARTMENT OF SPECIAL EDUCATION • MINNEAPOLIS 14

Dear Teacher:

A rather simple, descriptive study has been designed which seeks to gain potentially important and useful information about epilepsy in the public school setting. Little is known about the numbers of children with this condition or of the attitudes of present-day teachers.

Thus, your earnest cooperation is sought in the completion of the following page. Be sure to read both sides of the page! A pilot study has determined that it should take less than five minutes of your time, but the knowledge to be gained may have considerable importance in appropriate educational planning for children with seizures and in public education programs.

Please respond to each item as it is structured, adding a qualifying comment if you wish. There is space at the end for any further statement or comment you may wish to make. Please provide all of the identifying information which is requested at the top of the page. Accurate information is crucial for the analyses of the data from the Questionnaires.

Thank you for your consideration.

Yours truly,

Dewey G. Force, Jr.

Dewey G. Force, Jr., Ph. D.
Associate Professor
Special Education

DGF/dh