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Knowledge, Attitude and Practice Study of Patient's Caregiver in Usage of Antiepileptics in their Children with Epilepsy

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ABSTRACT
Seizures are transient occurrences of abnormal, excessive, or synchronous neuronal activity in the brain, characterized by abrupt and involuntary skeletal muscle activity. Epilepsy is a major public health concern, characterized by aberrant neuronal discharges or hyperexcitability of neurons with synchronization. A study was conducted to assess knowledge, attitude, and practice of patient's caregivers on the usage of antiepileptics in children with epilepsy. The study found that 77% of respondents knew about epilepsy as a brain disorder, while 57% were aware of all treatment options. The study also found that parents had comparatively adequate knowledge of epilepsy and Antiepileptic Drugs (AEDs), but knowledge was negatively correlated with attitudes and practice of parents with university level education. Special education programs for parents of children with epilepsy may be required to close knowledge gaps in epilepsy care and ensure compliance and optimal therapeutic outcomes.

Keywords: Awareness, Antiepileptic drugs, Knowledge, Attitude, Practice, Pediatric epilepsy

INTRODUCTION:

Epilepsy is a major public health concern characterized by abnormal neuronal activity in the brain, causing sudden and involuntary skeletal muscle activity.[1] It can occur at any age and can cause the entire body to spasm or render the individual unconscious. Epilepsy prevalence varies between developed and developing nations, with Western nations having between 33.3 and 82 new cases per 100,000 people each year, and underdeveloped nations having a maximum incidence of 187/100,000 people.[2] The largest incidence occurs in a child's first year of life, with the overall incidence slightly increasing in males.[3] The pooled incidence rate of epilepsy was 61.4 per 100,000 person-years in a systematic review and meta-analysis of incidence studies. However, the overall prevalence and incidence data from recent studies in India are comparable to the rates of high-income countries (HICs).[4] Epilepsy is a condition characterized by frequent, unannounced seizures caused by abnormally excessive or synchronized neuronal activity in the brain. The majority of epilepsy patients receive treatment through antiepileptic medication therapy, with the three primary categories being partial, generalized, and unclassified.[5] The recurrence rate is between 30 and 40% after the initial seizure, with 70% after the second seizure. Treatment does not affect the underlying illness or the prognosis over the long run. Children with significant recurrence risks

typically consider treatment, while adults typically require treatment after the first seizure. The choice of whether to use an AED should be customized for each child who experienced a second seizure and had genetic or unexplained epilepsy. The psychosocial impact of seizures is rarely significant, and prolonged use of AEDs can result in morbidities.[6] Remission and recurrence after discontinuation have been the subject of numerous research, with most children and adolescents seizure-free for 60-75% of the time after stopping AED use. Identifying the high-risk population for recurrence following AED cessation is crucial from a clinical standpoint. The selection of appropriate antiepileptic drugs (AEDs) for epilepsy therapy is crucial after the diagnosis is confirmed.[7] The type of seizure and epileptic syndrome classification are the first steps in choosing an AED. AEDs like carbamazepine and oxcarbazepine are used for treating focal seizures, while vigabatrin is used for generalized onset seizures.[8] Ethosuximide is used for absence seizures, and clobazam or clonazepam is used for myoclonic seizures. Valproate is a common prescribed drug for generalized epilepsy. Plasma drug levels are frequently checked for classic AEDs, but recent ones do not need to be tested. AEDs are linked to negative effects, with approximately 15% stopped due to sudden or unusual side effects. Early detection of dose-dependent side effects and potential allergic responses should be discussed with patients and their families. Continuous monitoring of therapeutic and negative effects is essential for successful AED use.[9] Non-adherence to AEDs is the most common medication therapy problem, leading to hospitalization, higher healthcare costs, and a decline in quality of life. Improving understanding of epilepsy and its management can enhance adherence, improving therapeutic outcomes and overall quality of life for children with epilepsy.

MATERIALS AND METHODS:

This is a prospective observational study which was conducted in the inpatient department of Pediatrics, ESIC MC & PGIMSR hospital, Bengaluru. All the subjects (n = 88) meeting the Inclusion and Exclusion criteria were briefed about the purpose of the study. Data was collected through a patient demographic data form and a validated KAP questionnaire. The collected data were entered into Microsoft Excel, and appropriate descriptive and statistical analysis was performed.

Inclusion criteria:

- Parents/caregivers willing to participate in the study.

Exclusion criteria:

- Children with any comorbidities.

Statistical Analysis:

All recorded data were entered using MS Excel software and analyzed for determining for the statistical significance. Descriptive statistics such as mean & standard deviation were computed for quantitative variables and frequencies and percentages were calculated for categorical variables. Histogram and pie charts were applied to find the nature of data distribution.

RESULTS:

The study was conducted in the Inpatient Pediatrics Department of ESIC hospital. This was carried out for a period of three months and a total of 30 parents were interviewed whose children had epilepsy.

DISTRIBUTION OF PARENTS OF CHILDREN INTERVIEWED BASED ON AGE AND GENDER:

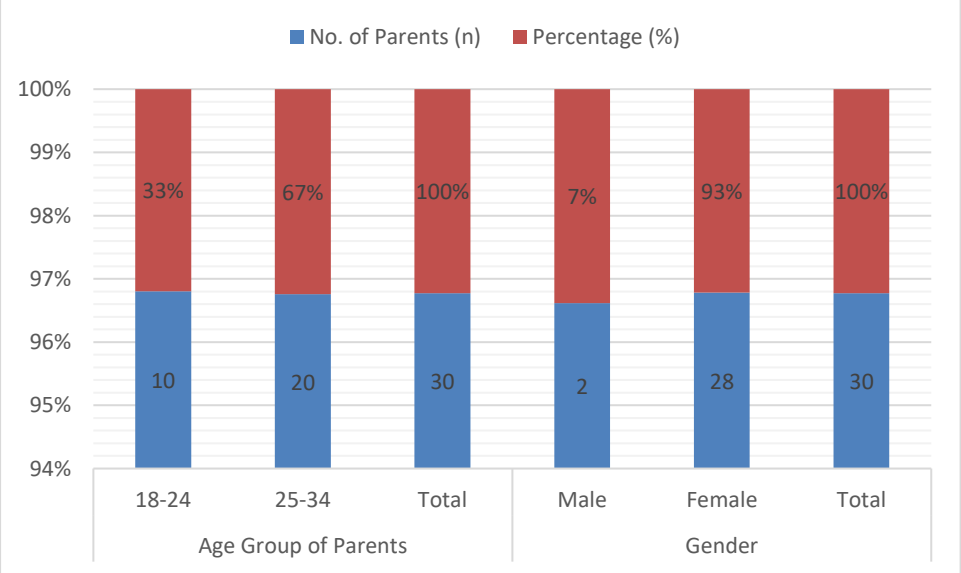
Out of 30 parents of children 10(33%) parent were of 18-24 years of age and 20(67%) parents were of

25-34 years of age. Out of 30 parents interviewed 2(7%) were Fathers and 28(93%) were Mothers. The data is explained in Table 1 and Figure 1.

Table 1: Distribution of parents of children interviewed based on age and gender

Category	Subcategory	No. of Parents (n)	Percentage (%)
Age Group of Parents	18-24	10	33%
	25-34	20	67%
	Total	**30**	**100%**
Gender	Male	2	7%
	Female	28	93%
	Total	**30**	**100%**

Figure 1: Distribution of parents of children interviewed based on age and gender



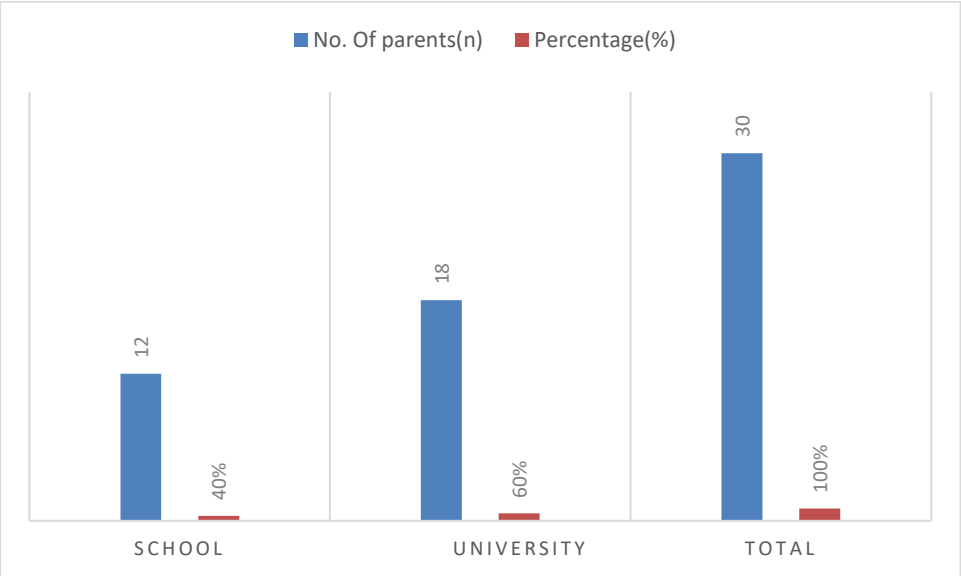
DISTRIBUTION OF PARENTS BASED ON EDUCATION LEVEL:

Out of 30 parents included in the study, 12(40%) were educated in school level and 18(60%) were having university degree.

Table 2: Distribution of parents based on education level

Education level	No. Of parents(n)	Percentage(%)
School	12	40%
University	18	60%
TOTAL	**30**	**100%**

Figure 2: Distribution of parents based on education level



DISTRIUTION OF RESPONSES RECEIVED FOR KAP QUESTIONNAIRE:

Parents of children were administered with validated KAP questionnaire (knowledge, attitude andpractice). The questionnaire consists of 29 questions as an instrument to assess the knowledge, attitude and practice of parents towards use of anti-epileptics in children. Knowledge was assessedusing 18 questions, attitude using 8 questions and practice using 3 questions.

Table 3:Knowledge	
K1	Do you think epilepsy is a brain disorder?
K2	Do you think epilepsy is always hereditary?
K3	Do you think epilepsy is a contagious disease?
K4	Do you think epilepsy is always curable?
K5	Can febrile seizures be labelled as epilepsy?
K6	Do you believe that always there is a state of unconsciousness during an epileptic attack?
K7	Do you believe that symptoms and severity of epileptic attacks vary from patient to patient?
K8	Do you know any epilepsy treatment options other than with drugs?
K9	Do you know that specific dietary therapy has a key role in controlling seizure attacks?
K10	Do you know that blood investigations are needed in patient on prolonged antiepileptic therapy?
K11	Do you believe that the time at which the medication taken will influence its effectiveness?
K12	Do you think that complete seizure freedom for a period is absolutely essential for stopping antiepileptic drugs?
K13	Do you think it is better to stop taking antiepileptic medication when your child feels ill?
K14	Do you know that the antiepileptic drug therapy may not have an immediate effect?
K15	Do you know that the dose of medication is determined by your child's body weight?
K16	Do you believe that it is advisable to change frequently the brands of the drug?
K17	Do you think that some antiepileptic drugs can affect memory and concentration of your child?

K18	Do you think that antiepileptic drug therapy will have side effects?

Table 4: A cumulative distribution of response received for assessment of attitude

Response	K1		K2		K3		K4		K5		K6		K7		K8		K9	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Yes	23	77	7	23	0	0	6	20	18	60	19	63	21	70	17	57	12	40
No	7	23	23	77	30	100	24	80	12	40	11	37	9	30	13	43	18	60

K10		K11		K12		K13		K14		K15		K16		K17		K18	
n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
19	63	11	37	9	30	15	50	13	43	22	73	11	37	22	73	26	87
11	37	19	63	21	70	15	50	17	57	8	27	19	63	8	27	4	13

Figure 3: A cumulative distribution of response received for assessment of knowledge

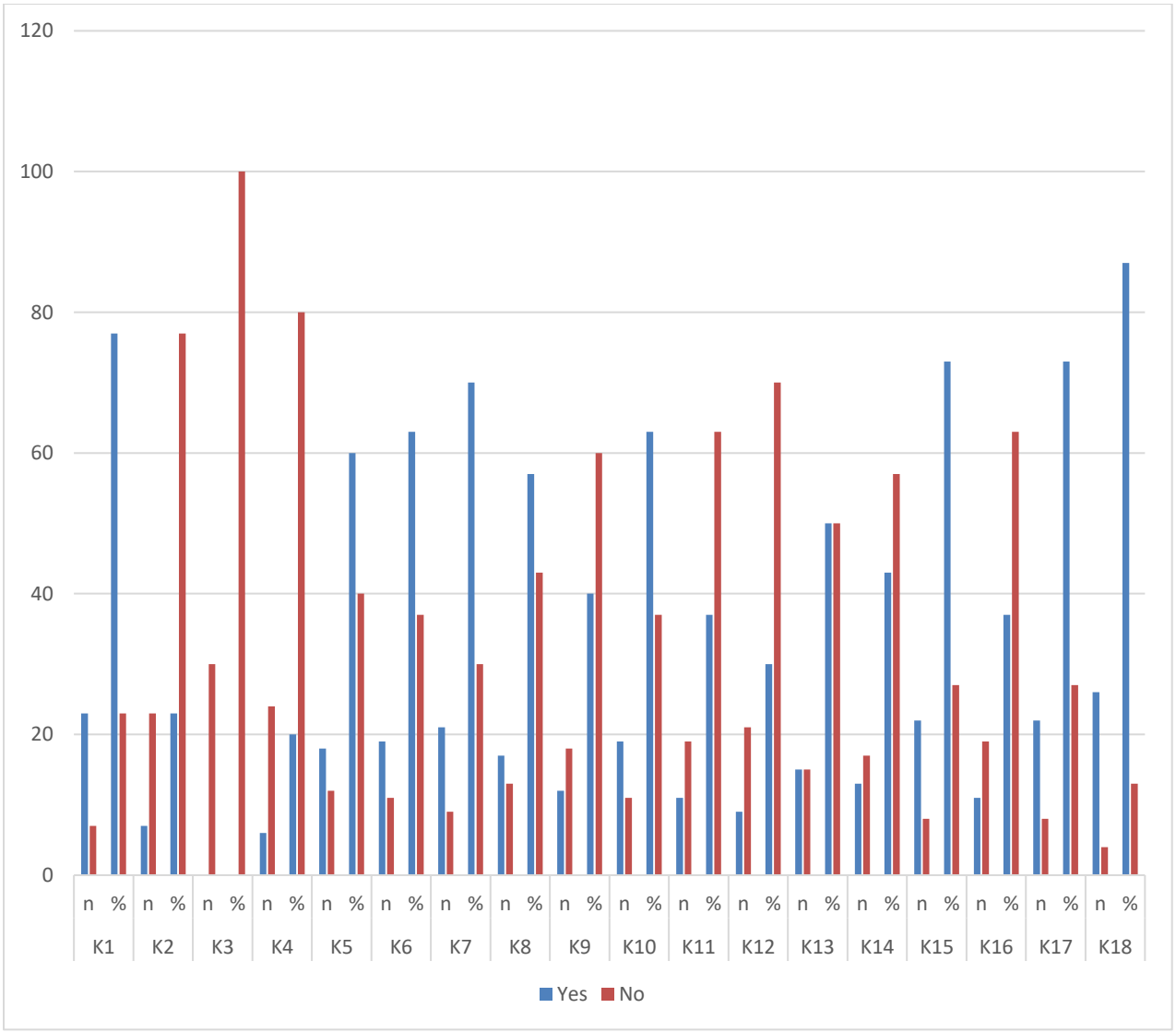


Table 5:Attitude	
A19	Do you think it is necessary to disclose your child's epileptic condition while consulting a general physician?
A20	Do you think it is essential to check the expiry date of the medicine while purchasing it?
A21	Do you believe that it is necessary to take medicines as advised by your doctor?
A22	Do you think that disappearance of seizures means that treatment is no longer necessary?
A23	Do you think that antiepileptic drugs must be taken life long?
A24	Do you think that missing doses and/or taking them late or incorrectly will affect the treatment response?
A25	Do you think it is wise to use any other alternative systems of medicine while on antiepileptic drugs?
A26	Do you believe that by taking antiepileptic medication the user will become addicted and therefore be unable to stop taking it?

Table 6: A cumulative distribution of response received for assessment of attitude

Response	A19		A20		A21		A22		A23		A24		A25		A26	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Strongly Disagree	1	3	0	0	0	0	0	0	4	13	3	10	3	10	2	7
Disagree	5	17	1	3	1	3	1	3	16	53	16	53	16	53	7	23
Neutral	12	40	6	20	3	10	16	53	7	23	4	13	4	13	5	17
Agree	7	23	15	50	18	60	12	40	3	10	6	20	6	20	14	47
Strongly Agree	5	17	5	17	8	27	1	3	0	0	1	3	1	3	2	7

Figure 4: A cumulative distribution of response received for assessment of attitude

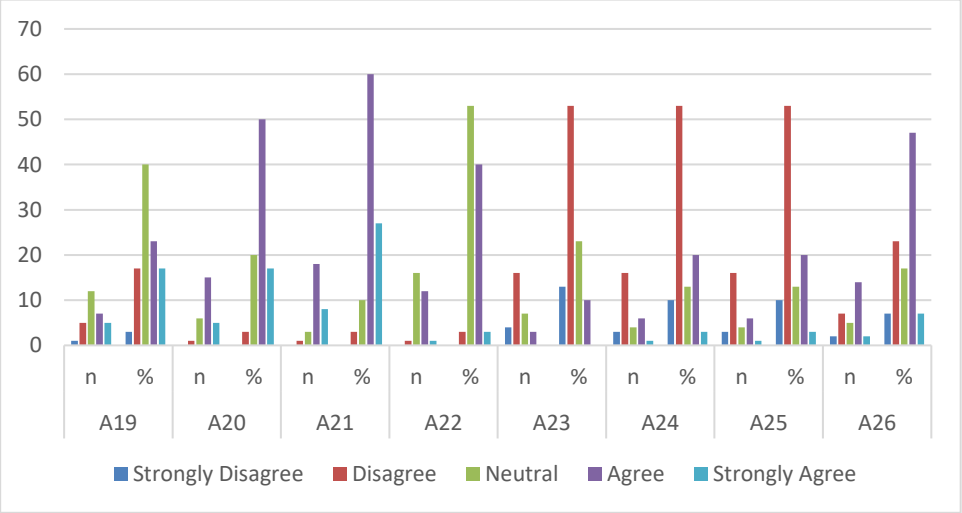
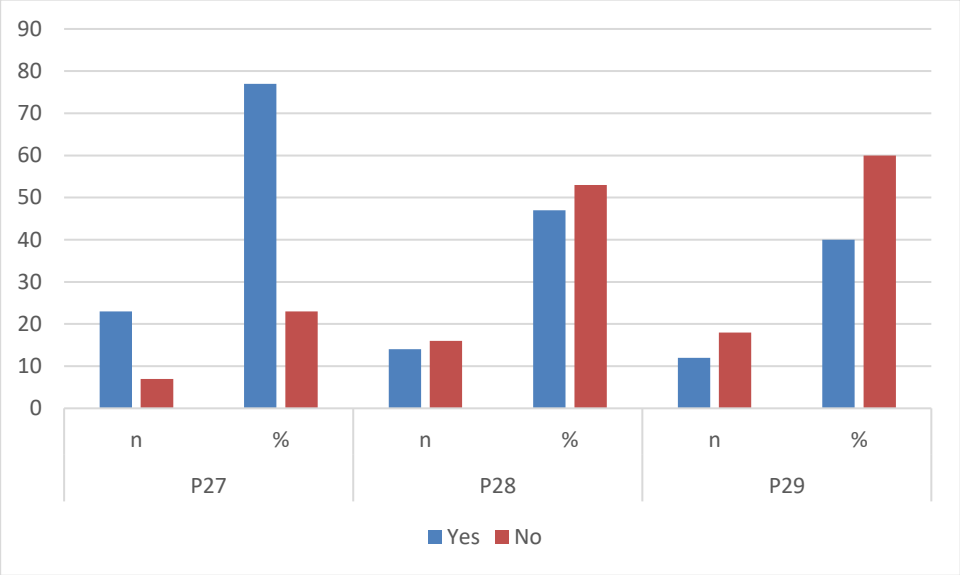


	Table 7: Practice
P27	Do you think it is important to keep medicines in proper storage conditions (air tight container & proper temperature)?
P28	Do you think it is desirable to take more amount of antiepileptic medication than prescribed when your child feels seizure symptoms?
P29	Do you think that antiepileptic drugs can be stopped abruptly?

Table 8: A Cumulative distribution of responses received for assessment of Practice

Response	P27		P28		P29	
	n	%	n	%	n	%
Yes	23	77	14	47	12	40
No	7	23	16	53	18	60

Figure 5: A Cumulative distribution of responses received for assessment of Practice



DISCUSSION:

This observational study was conducted in the Department of Pediatrics, ESIC MC- PGIMSR & MH, Rajajinagar, Bengaluru for a period of 3 months. A total of 30 subjects were enrolled in the study, based on inclusion and exclusion criteria. The subjects (parents or patient's caregiver) were categorized according to age, gender and education level. Out of the 30 subjects who participated in the study, the majority of them belonged to the age group of 25-34 years (67%) (n=20) and the number of females [mothers] (93%) (n=28) were more than the males[fathers] (7%) (n=2) Majority of the parents had completed their education upto university level(60%) (n=18). In the present study, based on educational status of parents interviewed 60% (n=18) of the respondents have been educated till university level and 40%(n=12) of the respondents have been educated till school level which was comparatively less than study conducted by Minumaria Shaju et al., which showed 77.24%(n=95) of the respondents were university graduates and only 22.76%(n=28) of the respondents had completed school. In this study 77% of the respondents were aware that epilepsy is a brain disorder which was almost similar to previous study

conducted by Minumaria Shaju et al.,. 77% of the respondents knew that epilepsy is not hereditary which was comparatively less than the previous study in which 94% of the respondents were aware that epilepsy is not hereditary. Everyone knew that epilepsy is not contagious similar to the previous study conducted. 80% of the respondents in the current study think that epilepsy is not curable and in the previous study only 15% of the respondents think that it is not curable. In the previous study 55% of the respondents were aware that febrile seizure cannot be labelled as epilepsy which was more compared to the present study in which only 40% of the respondents were that febrile seizures and epilepsy are not same. In the current study 63% of the respondents believed that there is always state of unconsciousness during an epileptic attack but in the previous study only 10% of the respondents believe that there is always a state of unconsciousness during an epileptic attack. In the current study, according to 70% of the respondents are aware that symptoms and severity of epileptic attacks vary from patient to patient which was comparative less than the previous study in which 91% of the respondents were aware that symptoms and severity of epileptic attacks vary from patient to patient. In the previous study only 6% of the respondents were aware about the other treatment options other than drugs which was less compared to the present study in which 57% of the respondents knew about the other treatment options other than drugs. In the present study, 12(40%) parents believed that ketogenic diet has a role in controlling seizure attacks and 18(60%) parents were not aware that specific dietary therapy has a key role in controlling seizure attacks and in the previous study 24% of them believed that ketogenic diet has a role in controlling seizure attacks. In the current study, 19 parents (63%) were aware that blood samples can be used to measure the concentration of AEDs in the body for prolonged antiepileptic therapy which is comparatively high than previous study in which it shows 35 respondents (28%)were aware that blood samples can be used to measure the concentration of AEDs in the body. In this study, 19 parents (63%) believed that time at which medication is taken will not influence its effectiveness and 11parents (37%) believe that time at which medication is taken will influence its effectiveness. In this study , only 21 parents(70%) did not know that a complete seizure free period is absolutely essential for stopping AEDs. In the previous study among 123 participants, 16 (13%) did not know that a complete seizure free period is absolutely essential for stopping AEDs. In this study, 50% of the parents think its is better to stop taking antiepileptic medication when child feels ill. In the previous study, only 2% of the parents feel it is better to stop taking antiepileptic medication when child feels ill. In this study, 13(43%) parents know that antiepileptic drug therapy may not have an immediate effect and 17(57%) parents did not know that antiepileptic therapy may not have an immediate effect. In the previous study ,73% know that the antiepileptic drug therapy may not have an immediate effect. This study show that 22(73%) parents were aware that dose of medication is determined by child's body weight and 8 parents (27%) were not aware that dose of medication is determined by child's body weight which was nearly similar to the previous study. In this study, 19 parents (63%) believed that it is not advisable to change brands of the drug frequently comparatively less than previous study which shows that 85% believed it is not advisable to change brands of the drug frequently. This study shows that 22 parents (73%) thought that some AEDs can affect memory and concentration of the child and 8 parents (27%) believed that it does not affect memory and concentration of the child. In previous study, seventy-three (59%) parents thought that some AEDs can affect memory and concentration of the child. This study show that 26 parents (87%) think that anti-epileptic drug therapy will have side effects and 4 parents (13%) think that antiepileptic won't have any side effects. According to this study, 6 parents (20%) disagree to disclose the child's epileptic condition while consulting a general physician and 12 parents (40%) agree to disclose child's epileptic condition while consulting a general physician and 20 parents (67%) agree

that it is essential to check the expiry date of the medicine while purchasing it. Out of 30 parents, 19 parents (63%) don't think that it is wise to use other alternative systems of medicine while on antiepileptic drugs and 7 parents (23%) think that other alternative systems of medicines can be used. In the previous study, 85% of the respondents think it is not wise to use any other alternative systems of medicine while on antiepileptic drugs. Another KAP survey from rural Gujarat demonstrated the lack of awareness about the proper usage of drugs, storage of medicine and their expiry dates.35 This study shows comparatively adequate knowledge of parents regarding epilepsy and AEDs.

Table 9: CORRELATION BETWEEN KNOWLEDGE, ATTITUDE AND PRACTICE

SCHOOL/UNIVERSITY	Knowledge	Attitude	Practice
Knowledge	1		
Attitude	-1	1	
Practice	-1	1	1

Though Knowledge is adequate regarding AEDs it is negatively correlated with Attitude and practice of parents having university level education. Attitude of parents regarding AEDs at school level education has positive correlation with Practice in university level education. Practice is positively correlated at school and university level of parents.

CONCLUSION:

This observational study was conducted in the Department of Pediatrics, ESIC MC- PGIMSR & MH, Rajajinagar, Bengaluru for a period of 3 months. A total of 30 subjects were enrolled in the study. Even though the parents had a good understanding of the nature of epilepsy, they were less knowledgeable about its characteristics, causes, and prognosis. The level of knowledge on the nature and duration of treatment, its objectives, drug use, side effects, and the need of adhering to a drug regimen was shown to be extremely low, potentially impacting the therapeutic outcome. Special education programs for parents of children with epilepsy may be required to close knowledge gaps in epilepsy care and to ensure compliance and optimal therapeutic outcomes. Though Knowledge is adequate regarding AEDs it is negatively correlated with Attitude and practice of parents having university level education. Attitude of parents regarding AEDs at school level education has positive correlation with Practice in university level education. Practice is positively correlated at school and university level of parents.

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