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RESEARCH ARTICLE

BELIEVE THE ABLE NOT THE LABEL: CORRELATION BETWEEN PARENTAL PERCEPTION ABOUT EPILEPSY AND ORAL HEALTH OF THE CHILD

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ABSTRACT

Background: Childhood epilepsy may intrude the parent's social and familial life thus building stress and anxiety in them. Parental behaviour, their characteristics and beliefs are important considerations for maintaining the child's physical health, cognitive health and oral health. Thus the objective of the study was to assess parent's knowledge and attitude about epilepsy and oral health of their child and to obtain co-relation with oral health status of the child.

Materials and Methods: This cross sectional study was conducted in the outpatient department of Paediatric Dentistry which included 65 children suffering with epilepsy (age group 1- 14yrs) and their respective parents. A questionnaire was administered to the parents regarding knowledge and attitude of parents towards the epilepsy and oral health care of children. The oral health characteristic of children was recorded using DMFT index for caries prevalence, oral hygiene index (OHI) and Gingival index for gingival health.

Results: A positive correlation was obtained between the Parental knowledge regarding Epilepsy and their attitude towards Epilepsy. Negative correlation was present between the Parental Knowledge and Attitude about Epilepsy with the Parental knowledge about Oral Health Status of the patient.

Conclusion: Though parents had good knowledge and attitude about epilepsy, there is a dental neglect towards their children. Therefore there is a greater need to bring in the awareness among parents and instil positive dental attitude to maintain optimum oral health as poor oral health can inturn affect general health, growth and well being of the child.

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INTRODUCTION

Adoption of right attitude can convert a negative stress into a positiveone" Hans Selye Children are considered as our future and hence the health of the child be it general, emotional, mental or oral should not be compromised. Parents and not the doctors are the primary gatekeepers of their child's overall health. Epilepsy is one of the most common paediatric neurological disorder (*Zainy et al.,* 2013) with an incidence rate of recurrent unprovoked seizures in children and adolescents between 50-100/100,000 with the highest incidence in the first year of life (Norzila, 1997). Epilepsy is a chronic disorder which may need lifelong care. Witnessing the seizure episodes by the parents can be extremely frightening, emotionally traumatic and anxiety inducing. Thus, the child with epilepsy can pose a considerable stress and may have an impact on parenting, routine family activities and suspicion regarding the achievements in future as well as perceived stigma. The attitude of parents toward the children with epilepsy is influenced by the depth of knowledge of the condition. The parent's perception about the illness itself may influence the course and outcomes of the illness. Parents play a vital role in governing the decision about health and illnesses which has an effect on the choice of treatment and the general upbringing of the child. Many children outgrow their epilepsy but for those who do not, the affected family must learn to live with the disorder. Some children may be weaned off from the anti-convulsants and with few others it cannot be controlled. Parents must recognise and understand how this might affect the individual and be able to help the children instead of pitying them. Poor quality of life and its impact on oral health and disease in children with epilepsy is not only the result of the chronicity of the disease but the need for taking regular medication, prejudice and social conventions that still surrounds it with the elevated levels of parental anxiety. Sense of helplessness that surrounds the epileptic condition lead some parents to exert control in non-health related areas of

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their child's life. Especially mothers of children with epilepsy were described as being permissive or overprotective or excessively restrictive towards their child (Caplan, 2015). Knowledge of epilepsy leads to less stigmatization, social isolation, and depressive symptoms. Overall, parent's attitude towards children with epilepsy is significantly influenced by the depth of their knowledge of the disease. It has been observed through the previous studies that the overall oral health status of epileptic patients is poor than the healthy individuals (Sureka *et al.,* 2015).Unacceptable behaviours such as lack of co operation may complicate dental assessment and treatment and these behaviours might have an influence on parental anxiety and their perception towards epilepsy and various oral health. The Overall quality of life, general and dental health can be hampered by epilepsy. Thus, the objectives of the present study were, to study parental knowledge and attitude towards children with epilepsy and parental knowledge about oral health of child; to obtain the basic oral health status of the child and to obtain Correlation between the parental knowledge and attitude towards children with Epilepsy and parental knowledge about oral health status of the child and the oral health of the child.

MATERIALS AND METHODS

It was a cross sectional study which included 65 children diagnosed with epilepsy and their respective parents, 65 in number. The inclusion criteria was, children from the age group 1- 14 years and Children with recurrent seizure or with history of minimum 2 seizure episodes in past. Parents not willing to participate in the study were excluded. Study was conducted at the outpatient department of Paediatric dentistry in the period of July 2016 and June 2017. Informed consent was obtained from parents voluntarily participating for the study. The personal information and data pertaining to the epilepsy itself (including present and previous antiepileptic drug type and frequency of seizures) were collected. A structured 24 item questionnaire was designed to assess parents knowledge and attitude towards epilepsy and their knowledge about the oral health status of the children. A researcher was present during the completion of the questionnaire and clarified any queries and thereby ensured that the questionnaire items were not misunderstood. A thorough dental examination was then followed, performed under standard conditions on a dental chair with adequate light by using standard dental instruments.

The examination included following:

- Oral hygiene was assessed by inspecting the amount of dental plaque and calculus individually on each tooth. The amount of dental plaque and calculus was quantified separately by assigning the numbers between 0 and 3 (0-none and 3- severe) (Soben Peter, 2010).
- The indexes for all teeth were then averaged to get the oral hygiene index for each patient.
- The degree of gingival bleeding provoked by periodontal probing was recorded separately. The severity of bleeding gave the measurement for gingival index. The severity of bleeding ranged from 0 to 3(Soben Peter, 2010).
- The patients teeth were then assessed and the numbers of decayed, missing and filled teeth were determined. The combination of these 3 values gave the DMF- T index of a patient (Soben Peter, 2010).

Statistical Analysis

Statistical analysis was performed using SPSS version 20. Data was then tabulated and analyzed. Karl Pearson's correlation coefficient was used for correlation of normally distributed numerical parameters. Spearman's ranks correlation was used for correlation between non normal parameters. The statistical significance was set at 5% level of significance.

RESULTS

Among the parents interviewed 76% were mothers and most of them were housewives without university degree. These children had variety of seizure but 70% were with recurrent generalised tonic clonic seizures. Positive answers to knowledge and attitude questions are summarized in Table 1. Around 55.38 % parent had heard about the epilepsy either through a friend or a relative or a physician and 44.6 % didn't know about the epilepsy till their own child suffered from it. Only 33.85% understood that Epilepsy will not affect their child's intelligence however, around 66.15% believed that epilepsy will affect the child's intelligene. Around 66.15% did not consider Epilepsy as a mental disease. About 92.31% parents knew that epilepsy is not a contagious disease. Most parents felt that the child will not achieve a lot in the future and they treated him/her differently and 32.32% felt that they need to put him/her in a special school. About 70% parents avoided upsetting their child in belief that upsetting may trigger the seizure attack. Around 33% parents considered that the child should attend the special school. Only 33.84% parents felt that there is no discrimination in the society against children with epilepsy. Only 4.6%parents were aware of the adverse effect of antiepileptic drugs on the oral and none of them took any preventive measure regarding the same.

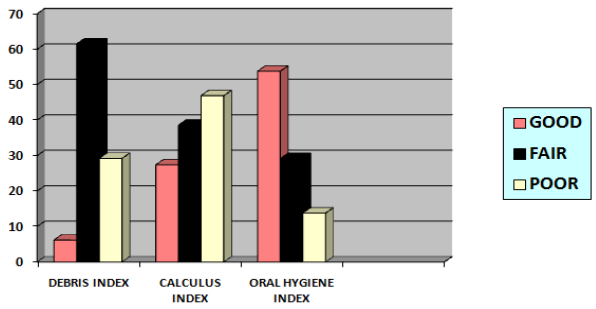

Figure 1. Graphical representation of the Oral Hygiene Index (%) of children with epilepsy

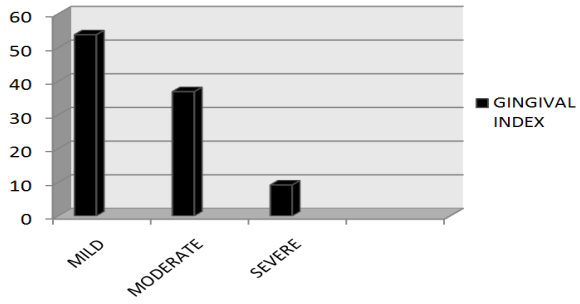

Figure 2. Graphical representation of the Gingival Index (%) of children with epilepsy

Table 1. Represents the Positive answers given by the Parents

Questionnaire	Positive Answers (%)
Parental Knowledge about epilepsy	
Did you hear about epilepsy before the diagnosis?	55.38
Are there non-medical treatments for epilepsy?	90.77
Is epilepsy a mental disease?	66.15
Does epilepsy correlate with evil?	93.85
Could epilepsy be treated by surgery?	6.15
Does epilepsy affect the intelligence of the child?	33.85
Could the child with epilepsy be cured?	92.31
Is epilepsy contagious?	92.31
Parental Attitude towards Epilepsy	
Could the child with epilepsy achieve a lot in his future life?	81.54
Do you avoid upsetting your child?	29.23
Could the child with epilepsy get married in the future?	76.46
Do you treat your affected child differently from his brothers?	66.15
Is there discrimination against the child with epilepsy in society?	33.85
Should the child with epilepsy attend a special school?	67.69
Do you consider your child always vulnerable to illness and crises?	47.69
Parental knowledge about Oral health status of the child:	
How often does the child brush his teeth?	20
Is your child afraid of dentist?	90.77
Are you aware of effects of antiepileptic drugs on the oral health?	4.62
Have you taken any preventive measures for the same?	0.00
Does your child use other methods of cleaning teeth?	0.00
How would you describe your child's teeth?	92.31
History of Previous dental visit	30
History of Gingival enlargement	4.62
History of Toothache	26.15

Table 2. Correlation between Parental Knowledge about epilepsy, Parental Attitude towards epilepsy and Parental knowledge about oral health care (%) by Karl Pearson's correlation coefficient

Variables	Correlation between		
	r-value	t-value	p-value
Parental Knowledge about epilepsy and Parental attitude towards epilepsy	0.2833	2.3450	0.0222*
Parental Knowledge about epilepsy and Parental knowledge about oral health care	-0.0611	-0.4855	0.6290
Parental Attitude towards epilepsy and Parental knowledge about oral health care	-0.1644	-1.3232	0.1906

Table 3. Correlation between Parental Knowledge about epilepsy, Parental attitude towards epilepsy and Parental knowledge about oral health care (%) with clinical parameters by Spearman's ranks correlation coefficient

	Clinical parameters	N	Spearman R	t-value	p-level
Parental Knowledge about epilepsy	Debris index	65	0.0990	0.7897	0.4327
	Calculus index	65	0.0387	0.3070	0.7598
	OH index	65	0.1353	1.0838	0.2826
	GI	65	0.1027	0.8194	0.4156
	DMFT	65	-0.2128	-1.7287	0.0888
Parental Attitude towards epilepsy	Debris index	65	-0.1460	-1.1715	0.2458
	Calculus index	65	-0.2157	-1.7531	0.0844
	OH index	65	-0.2572	-2.1126	0.0386*
	GI	65	-0.3271	-2.7471	0.0078*
	DMFT	65	-0.0041	-0.0328	0.9739
Parental knowledge about oral health care	Debris index	65	0.0534	0.4243	0.6728
	Calculus index	65	0.0229	0.1821	0.8561
	OH index	65	0.0527	0.4189	0.6767
	GI	65	-0.0261	-0.2070	0.8366
	DMFT	65	-0.0340	-0.2700	0.7880

A positive correlation with the significance ($p<0.05$) was obtained with the Parental knowledge regarding Epilepsy and their attitude towards Epilepsy. Negative but non significant ($p>0.05$) correlation was present between the Parental Knowledge and Attitude with the Parental knowledge about Oral Health Status of the patient. (Table 2) Negative correlation was shown between the Parental attitude towards epilepsy and the Oral Hygiene index and Gingival index with statistical significance of $p<0.05$. (Table 3) No correlation was found between Parental Knowledge about epilepsy and parental knowledge about oral health Care of children and Oral Health characteristics of the child. (Table 3) Figure 1 shows the about Oral hygiene index of children.

Around 60% children had their Debris index in Fair category, 45% children had their Calculus index in Poor category and overall 55% children had their Oral Hygiene Index in Good category. Figure 2 shows about the Gingival index of the children. In this 55% children had Mild Ginivitis, 35% had Moderate Gingivitis, less than 10% had severe gingivitis.

DISCUSSION

'Attitude' is defined as consistency in the form of reaction to social demands; it is expected to create preparation and guidance to the manifest behaviour of the individual (Sarnat *et al.,* 1994). For development of positive attitude towards the

child with epilepsy, parents of such children need to have good judgement about the condition and its complications as well as faith on the ability of the child to face it. In any chronic illness it is important to educate and familiarise parents about the illness itself. However, reinforcement of knowledge is very important for extinction of jitters and doubts about epilepsy (Norzila, 1997). Parents play a major role in decision-making about the treatment of their children and beliefs about health and illness affect their decision regarding the choice of treatment. Parental understanding is especially important because negative attitudes towards disability influences out comes for both the child in developmental gains, social adaptation and behavioural problems and for the family (Christianson *et al.,* 2000). An essential feature of managing the children with epilepsy and their families is the literacy about epilepsy of both parents and the physicians/dentists. The piece of information of knowledge obtained from parents will help to get a comprehensive picture of children who are being treated in epilepsy clinics rather than just focusing on the seizure control. This may assist in planning the holistic care, giving special attention to social and psychological impact that epilepsy has on these children. The data obtained from the present study showed that many parents of children with epilepsy are not well informed and have significant misconceptions, negative attitudes, and poor parenting practices. Misconceptions such as giving the child iron rod to hold if he/she is suffering from the seizure episode, sprinkling water on the face, taking the child in the open ground, avoiding the conversations about seizure episodes in front of the child were observed from the questionnaire answered by the parents. Morzila et al conducted a descriptive study to assess the parent's knowledge about epilepsy in the year 1997 in Malaysia and concluded that overall knowledge of parents was poor and they also were practising many wrong techniques such as inserting spoons in the mouth or massaging their limb during an acute attack of seizure (Norzila, 1997).

In the present study (Table 1) around 7% of parents correlated epilepsy with evil and around 67% believed that epilepsy will affect the intelligence of the child and around 33% parents felt that their child with epilepsy should attend a special school. Around 24% parents believed that their child should not get married in the future. Frank-Briggs AI et al reported similar doubts in parent's minds regarding the cognitive potential of children with epilepsy (Epilepsy and Dental Health, 2010). They felt that those children are not as bright as "normal" children. Such misconceptions can have significant negative implications on the medical and dental management with a higher risk of non-compliance. Similarly, Gambhir et al in 1995 showed that 15% of respondents believed epilepsy to be a form of insanity, 40% believed that children with epilepsy should not go to school or that their children should not play with them and two-thirds objected to their children marrying someone who had ever had epilepsy (Frank-Briggs and Alikor, 2011). This study (Table 1) shows that about 70% parents believed that they should not upset their child as it might trigger the seizure attack and round 67% parents felt that there is discrimination against the child with epilepsy in the society. Similarly, Kleinman *et al.,* 1995; Rwiza *et al.,* 1993; Virmani, Kaul, and Juneja, 1977 have concluded that difficulties in social adjustment for people with epilepsy are understandable due to the presence of various negative popular conceptions about it in China, Africa and Asia (Gambhir *et al.,* 1995; Virmani *et al.,* 1997; Kleinman *et al.,* 1995 Pruthi et al in 1979 conducted a rural questionnaire survey in Haryana, India and concluded that many felt that people with epilepsy were ''different to normal people'' and 85% thought they were a burden on the family (Rwiza *et al.,* 1993). Bains et al in 1992 repoeted that 57% of parents preferred to keep the diagnosis of their child's epilepsy a secret (Pruthi *et al.*). Understanding of epilepsy and seizures raises awareness of the disorder's impact on patients' general medical and psychological health (Bains *et al.,*1992). In the present study it was also found that parents with adequate knowledge about epilepsy showed reduced parental anxiety. As well, family activities were less restricted when they were more knowledgeable and they reported less worries about their children in this study during the interview session, the examiner educated and counselled parents about the epilepsy and its relation to the oral health. Parents felt that their whole context about epilepsy is reversed and also the certainty about the future of the child is heightened. This study was the first study to assess the presence of any correlation between the parental knowledge about epilepsy, their attitude towards epilepsy and their knowledge about oral health of the child with the oral health status of the child. The study showed a positive correlation between the Parental knowledge regarding Epilepsy and their attitude towards Epilepsy and negative correlation between the Parental Knowledge and Attitude about epilepsy with the Parental knowledge about Oral Health Status of the patient. However, negative correlation with significance ($p<0.05$) was shown between the Parental attitude towards epilepsy and the Oral Hygiene index and Gingival index. (Table 2, 3) Results obtained in our study have showed that around 30% children had OHI in Fair category and around 15% patients had OHI in Poor category. However, around 50% children had mild Gingivitis. In the present study (Table 1) less than 30% parents gave history of previous dental visit. This confirms that though the parents have adequate knowledge about epilepsy and have developed positive attitude towards the children with epilepsy they are still ignorant about the importance of maintaining good oral health.(Figure 1, 2) People are still not much aware of complicative effects of antiepileptic drugs on oral health. Children have a tendency to mimic their parental behaviour as they are their role models. Thus, Parental characteristics and beliefs are important consideration in the attempts made to improve child's oral health. Thus, as a paediatric dentist it is our responsibility to encourage both parents and the child for regular dental visits for maintaining optimum oral health of the child. There were certain limitations observed in this study such as small sample size and also it included children over a wide age range. And few children had other associated disorders such as cerebral palsy and intellectual disability.

Conclusion

Within the limitations of this study following conclusions can be drawn:

- Oral health is an important aspect of quality of life and every effort should therefore be made to improve oral health, especially in the group of people already disadvantageously affected by their disease.
- Parents should follow recommendations of regular dental visits once in 6 months or at least a year for maintaining optimal oral health.
- Parents have an irreplaceable role in caring for their child's health and hence orientation and training programs should be provided.

- Parents of children with epilepsy should be made aware of the periodontal diseases and the treatment modalities for their children on antiepileptic drugs and not to neglect oral health care.
- Children who are able to follow instructions should be instilled with positive dental attitude.
- Demystification of wrong beliefs will influence the parents and family's perspective in positive way and will also help in improving the relationship with their child.

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