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A study on the temperament of the children suffering from epilepsy at a tertiary care hospital

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Abstract
Introduction: Living with epilepsy generally involves more than adjustment to the intermittent episodes, long term drug therapy and medical supervisions. Those suffering from epilepsy also have to learn to cope with the immense hurt, due to social apathy, neglect, and the aversion stemming from revulsion. Many of those who have written of the psychosocial problems associated with epilepsy have confidently asserted that these are almost always caused by public discrimination arising out of the perception of epilepsy as stigmatizing.
Methodology: The study was conducted in a tertiary care, teaching hospital in Navi-Mumbai. 50 consecutive children in the age range of 4-14 years attending pediatric epilepsy clinic in a general hospital were selected for the study. 50 healthy children matched for age, sex and socio-economic strata with no acute illness at the time of interview constituted the control group.
Results: Upon application of Chi-square Test, the difference between psychopathology and the individual variables of TMS such as, activity level, intensity, distractibility and rhythmicity was found to be statistically significant(p value <0.05).
Conclusion: The temperament in terms of activity level, intensity, distractibility and rhythmicity, displayed a high level of alteration in children suffering from epilepsy.

Keywords: Epilepsy; Psychiatry; temperament

Introduction

Adopting a bio-psycho-social point of view has come a long way in understanding epilepsy in it' s totality, for an illness like epilepsy is fraught with it' s own vagaries and the misconceptions that we still harbour about this affliction; unfortunately though, Individuals afflicted with epilepsy have suffered greatly from, the illness itself along with its psychological implications, and the outcome of this gets further amplified due to the perceptions of the family members, friends and society at large.

Living with epilepsy generally involves more than adjustment to the intermittent episodes, long term drug therapy and medical supervisions. Those suffering from epilepsy also have to learn to cope with the immense hurt, due to social apathy, neglect, and the aversion stemming from revulsion. Many of those who have written of the psychosocial problems associated with epilepsy have confidently asserted that these are almost always caused by public discrimination arising out of the perception of epilepsy as stigmatising. [1] The incidental prevalence of psychiatric morbidity and behaviour problems in children with epilepsy is largely unknown. Surveys that have been carried, throw little light upon the comparative analysis because of the differences in criteria and methods of assessment. However, the general picture suggests that although many children with epilepsy behave normally at school, proportionally many of them have learning and behavioural problems than their non-epileptic peers i.e. children suffering from epilepsy may be considered a high risk group for the development of such problems. The problems associated with behaviour are often overlooked because of preoccupation with the neurological aspect of these cases. 'Psychosis and epilepsy are the antithetical manifestations of the same underlying disturbance of neuronal excitation- inhibition, probably mentioned by abnormal synaptic events hinging, at least in part, on perturbed dopamine mechanisms'. [2, 3] 'Children suffering from epilepsy have been found to be strikingly susceptible to psychiatric disorders and almost all forms of such abnormalities have been reported in them. Except for a few, most studies on epilepsy concern adults' [4] A psychiatrist often attends to the problem of epilepsy in children, as well as the behavioural problems or temperamental changes associated with it. Since epilepsy is perceived as a key problem, parents sometimes tend to handle the child differently than other siblings in the form of overprotection etc' [5] Deriving insight from these facts an attempt has been made to study the probable factors which play a significant role in bringing about the psychiatric morbidity in children suffering from epilepsy.

Methodology

The study was conducted in a tertiary care, teaching hospital in Navi-Mumbai. 50 consecutive children in the age range of 4-14 years attending paediatric epilepsy clinic in a general hospital were selected for the study. 50 healthy children matched for age, sex and socio-economic strata with no acute illness at the time of interview constituted the control group.

Informed consent was taken for the study from the parents and appropriate scales were administered to meet the above mentioned objectives. Parent of each child were explained about the nature of the study. Confidentiality about the identity and data gathered was assured.

Inclusion criteria for study group:

1. 50 consecutive children suffering from epilepsy, in the age range of 4-14 years and whose parents are willing to give consent to participate in the study.
2. Children with minimum duration of illness for more than 1 year.
3. E.E.G suggestive of seizure disorder in the past one year.

Inclusion criteria for control group:

1. 50 children attending paediatric OPD matching the same age group and socio-economic status with no medical or surgical illness and whose parents are willing to participate in study.

Exclusion criteria for subject and control group:

1. Patient or patient's relative who refused to give consent to participate in the study.
2. Chronic medical illness

Instruments used

1. Detailed Performa was prepared to gather information from the parent to clinically evaluate and collect the required data of each child.
2. CPMS – Childhood Psychopathology Measurement Schedule.
3. PHQ – Parental Handling Questionnaire.
4. TMS – Temperament Measurement Schedule.

50 consecutive children in the age range of 4-14 years attending the paediatric epilepsy clinic and who were on antiepileptic medications were selected along with 50 normal children attending general paediatric OPD; these constituted the study and the control group respectively. After taking the informed consent the samples were assessed on the basis of the information gathered through the Performa. The Child and his/her parent were individually interviewed. Each child and their parents were assessed on the above mentioned scales. Each child was subjected to routine IQ testing as well.

Childhood Psychopathology Measurement Schedule

The detailed procedural adaptation and standardization of the Child behaviour checklist (CBCL) to the Indian situation was done by Malhotra *et al*. in 1988. However this checklist had it's own limitations when applied to an Indian setting, especially when it came to measuring the social competency, and moreover because of it's greater emphasis in the assessment of psychopathology rather thetotal evaluation of the competencies or the impairments, hence in our study we preferred the use of CPMS instead. [6] Childhood Psychopathology Measurement Scale or the CPMS, in it's final form, is a bilingual scale, both in Hindi and English. It comprises 75 items with response rated as 'yes' (0) or 'no' (score 1); this can be administered as an interview schedule or as a self-administered questionnaire; CPMS also serves as a useful guide to clinical interviewing. It is applicable to 4-14 years old children of both the sexes. Taking the cut-off score of 10 and above, CPMS can be used as a screening instrument in epidemiological studies as well. Total, and also specific factor scores can be used to quantify or categorize psychopathology, as also as to monitor the change in clinical condition during medical intervention. Assessment can be done on the basis of the information which is obtained as per the symptoms listed in CPMS, and whether they were present during the past one month, six months, any time or during the most part of a child's illness. The informant should be a parent, preferably mother or a parent surrogate. [7]

The advantage of CPMS over CBCL include ease of administration; simplicity of scoring; applicability to a wide age range and local cultural context; availability of local norms; wider application such as, it's use for the screening purpose; quantification of psychopathology and measurement of the clinical progress. The CPMS has been extensively used in studies in India, and with satisfactory results. Temperament Measurement Schedule: A temperament measurement schedule (TMC) for children was developed and standardized for use in India. Questions in simple Hindi and English were devised on the basis of published description of behaviour associated with each of the nine dimensions provided by Thomas *et al*., [8] and also with inputs from the Temperament Characteristics Schedule of Graham *et al*., [9]. Since a direct and rigid Hindi translation of the scales/questionnaire would not be of help, the questions were rather framed in simple Hindi keeping in mind, the basic concept. The standardization method has been reported in detail elsewhere (Malhotra and Randhawa, 1982). The Temperament Measurement Schedule (TNS) in its bilingual form had items in Hindi and English and also the scoring instructions. Devised for children of both the sexes, between 4 and 14 years of age, the data obtained was based essentially on the emotionally disturbed children who attended the child guidance clinic, for measurement of their temperament before the onset of symptoms; normal children were also assessed on similar lines.

In its final form the Temperament Measurement Schedule comprises 45 items, 5 items in each of the 9 variables is rated on a 5 point scale. Definitions are provided for the two extreme scores 1 and 5, with a midpoint at 3. The scores lesser then 3 are conceived to bein the negative direction and those greater than 3 in positive direction depending on the intensity and the frequency of the behaviour measured by each item. Mean score of each variable is computed by dividing the total score by 5. Factor 1 consists of 3 variables: approach-withdrawal, adaptability and threshold. The total range of possible scores would be 3-15 (sum total of the mean scores on the three variables). Known as the sociability factor, scores indicate that the child is quite responsive to the environment, adjustable, adaptable, and uninhibited. Factor 2 consists of 2 variables: mood and persistence. The possible range and scores on this factor would be 2-10. This factor is known as emotionality. High score in this area would generally indicate a child with a positive and happy mood, whereas a low score would mean a child with predominantly negative mood or one that fluctuates between two moods.

Factor 3 consists of 2 variables: activity and intensity and the range of possible score would be 2-10. the factor has been named as energy. A high score would mean higher levels of physical as well as psychological energy in the child's behaviour and reactions and vice versa if the score is low.

Factor 4 consists of one temperament variable i.e. distractibility; the range of possible scores would be 1-5. It basically denotes attention span and distractibility in child. High score in this variable indicates fleeting attention and high distractibility and vice versa if score is low. Factor 5 or the Rhythmicity factor has been retained as an independent variable. High score indicates a well-regulated child and vice versa if the score is low.

Results and Discussion

On TMS, the children from the subject group had high scores on the following variables, viz. activity level, intensity, distractibility and rhythmicity. Upon the application of 'Chi-square test', the difference between the temperaments in the subject and the control group was found to be significant for activity level, intensity, distractibility and rhythmicity (p-value<0.05)

Temperament Measurement Schedule

	Subject		Control		
					P Value
TPMS					
	Mean	S.D.	Mean	S.D.	
Approach	2.828	.189	2.804	.182	.512
Withdrawal					
Adaptability	2.784	.155	2.800	.161	.615
Threshold	2.788	.178	2.796	.164	.816
Responsiveness					
Mood	2.820	.190	2.772	.145	.161
Persistence	2.808	.180	2.800	.180	.825
Activity Level	3.660	.728	2.800	.171	.000*
Intensity	3.368	.398	2,772	.145	.000*
Distractibility	3.256	.491	2.796	.164	.000*
Rhythmicity	2.984	.413	2.800	.161	.050*

Comparison between variables of TMS and CPMS

	CPMS<10	CPMS>10	TOTAL
Activity level	2(10.5)	17(89.5)	19(38)
Intensity	1(5.6)	17(94.4)	18(36)
Distractibility	1(9.1)	10(90.9)	11(22)
Rhythmicity	1(20)	4(80)	5(10)

There are no significant changes noted in the following temperament variables: approach withdrawal, adaptability, threshold of responsiveness, mood and persistence with respect to psychopathology in both subject and the control groups. In subject group the temperament variables which had high scores with respect to the psychopathology were activity level, intensity, distractibility and rhythmicity. Upon application of Chi-square Test, the difference between psychopathology and the individual variables of TMS such as, activity level, intensity, distractibility and rhythmicity was found to be statistically significant(p value <0.05).

The temperament in terms of activity level, intensity, distractibility and rhythmicity, displayed a high level of alteration in children suffering from epilepsy. The temperament variables of approach withdrawal, adaptability, threshold of responsiveness, mood and persistence, did not show much correlation to the psychopathology noted in the study population. In the group of the epileptic children, the variables which presented high scores with respect to psychopathology were activity level, intensity, distractibility and rhythmicity.

Conclusion

The temperament variables of approach withdrawal, adaptability, threshold of responsiveness, mood and persistence, did not show much correlation to the psychopathology noted in the study population.

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