

## Temperamental Traits Associated with Conversion Disorder

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*The aim of this study was to analyze the temperamental traits associated with conversion disorder in children. Thirty children with conversion disorder attending a child guidance clinic were compared with an age and sex matched control group of normal children for life stresses and temperament dimensions. The temperament measurement schedule (TMS) and the life event scale for Indian children (LESIC) were used for evaluating the temperament dimensions and life stresses respectively. Children with conversion disorder experienced significantly more stressful life events compared to the children in the control group. The stress factors included scholastic difficulties, examination failures, punishment by teacher, conflict with peers, parental disharmony and family problems and sibling rivalry. The characteristic temperamental traits associated with conversion disorder were low emotionality and low threshold of responsiveness.*

**Key words:** *Conversion disorder, Stress, Temperament.*

**T**EMPERAMENT refers to individual differences in behavioral characteristics of children. These individual differences appear early during childhood and are stable to a certain extent(1). Even though there is a genetic basis for temperamental dispositions of an individual, these are modified by environmental factors. Alexander Thomas and Stella Chess who launched the New York Longitudinal study in 1956 systematically explored these differences in children and their significance(2). They documented 9 temperamental dimensions such as activity level, rhythmicity, approach or withdrawal, adaptability, threshold of responsiveness, intensity of reaction, quality of mood, distractibility, attention span and persistence. Modern concepts of temperament emphasize its emotional, motivational and adaptive aspects and four specific temperament traits have been identified. These are harm avoidance, novelty seeking, reward dependence and persistence(3). Conversion disorder refers to

one or more symptoms or deficits affecting voluntary motor or sensory function, that suggest a neurological or general medical condition, where no organic cause could be identified. Conflicts or stress precede the initiation or exacerbation of the symptom or deficit(4).

Even though the relationship between temperament and psychopathology is well documented, Indian studies that specifically analyze the relationship between temperament and conversion disorder in children are sparse. The present study was undertaken to analyze the temperamental characteristics of children who develop conversion disorder.

### Subjects and Methods

The study was conducted at the Child Guidance Clinic (CGC) attached to the department of Pediatrics at Medical College, Calicut during a period of 6 months from August 2003 to January 2004. Children below

the age of 12 years who satisfied the DSM IV diagnostic criteria(4) for conversion disorder were included. Children with mental retardation and those with symptoms due to organic causes were excluded. Data were obtained on socio demographic characteristics, clinical details and mental status examination.

Age and sex matched control group of children with no features of conversion disorder, was selected from among children attending the general pediatric outpatient clinic for minor illnesses during the same period. Children with prolonged illnesses, mental retardation, developmental delay, history of seizures or neurological deficits and children with history of emotional or psychological disorders in the past were not included in the control group.

The children in the study group and control group were rated on the Temperament Measurement Schedule (TMS)(5) and the Life Events Scale for Indian Children (LESIC)(6). Information regarding the TMS and LESIC was obtained from the mother in all children and in some cases the father was also present at the time of the interview. Seguin Form Board test(7) was used to assess the IQ level of children to rule out mental retardation.

Mann-Whitney U test was used for comparison of children in the study group and the control group with regard to life stresses and temperament dimensions.  $P < 0.05$  was taken as statistically significant.

## Results

There were 22 girls and 8 boys in the study group. In the below 10 year age group the male/female ratio was 1:1.4 (5 boys and 7 girls) whereas above the age of 10 years the ratio was 1:5 with 3 boys and 15 girls.

Pseudo-seizures were the commonest type of conversion disorder observed (15; 50%).

Fainting spells and hyperventilation occurred in 6 (20%) children each. The other manifestations included aphonia (2; 7%), drooping of eyelids (2; 7%), and psychogenic vomiting (2; 7%). There were 1 case each of diplopia and paralysis of limbs. Six children had more than one type of symptom. A real life model was present in 10 (33%) children. Six children with pseudo-seizures and one child with fainting episode had witnessed epileptic attacks in a family member or classmate, which acted as model for symptom formation. One child each with paralysis, psychogenic vomiting and diplopia had relatives with similar symptoms. Duration of symptoms at the time of presentation was less than one month in 19 (63%) children and less than six months in 9 (30%) children. Two children had symptoms for more than six months duration.

Stress either at home or school was present in 60% (18) of cases. 13 (43%) children had stress at home and 11 (37%) had school-related stress. Family stress included sibling rivalry (8; 27%), parental death, divorce or separation (3; 10%), parental disharmony (2; 6%) and family h/o mental illness (3; 10%). The school related stress included scholastic problems (8; 27%), examination failure (6; 20%), punishment by teacher (5; 17%) conflict with classmates (4; 13%) and change of school (2; 6%). Compared to the control group, children in the study group had experienced significantly more number of life events ( $P = 0.04$ ) and had higher life event score on the Life Events Scale ( $P = 0.001$ ).

On the temperament measurement schedule, statistically significant differences were present on the three temperamental dimensions, threshold of responsiveness, mood and persistence (*Table I*).

## Discussion

The finding that children with conversion

**TABLE I**—*Temperament Dimensions of Children with Conversion Disorder*

Temperament dimension	Mean rank		P value
	Case	Control	
I. Sociability	28.08	32.92	0.282
Approach withdrawal	29.58	31.42	0.680
Adaptability	31.73	29.27	0.574
Threshold of responsiveness*	23.27	37.73	0.001
II. Emotionality	22.17	38.83	<0.001
Mood*	24.45	36.65	0.005
Persistence*	25.73	35.27	0.022
III. Energy	33.00	27.10	0.175
Activity	32.07	28.00	0.272
Intensity	32.83	27.27	0.183
IV. Distractibility	29.33	31.67	0.553
V. Rhythmicity	29.95	31.05	0.774

disorders had significantly low score on threshold of responsiveness, compared to the children in the control group, indicates that these children are more sensitive to environmental changes. Low score on the emotionality dimension shows that they have a predominantly negative mood (angry, annoyed, discontented or irritable) and that they do not take serious effort to complete the tasks they are engaged in (Low persistence).

Malhotra, *et al.*(8) found that emotionally disturbed children had significantly lower score compared to the normal children on the dimension of emotionality indicating negative mood. In this study, low intelligence with behavior problem, conduct disorder and somatization were related to three traits of temperament, namely emotionality, energy, and attentivity (distractibility) respectively. Another study from South India found that children with conversion disorders have characteristic temperaments of low activity, low emotionality, low rhythmicity and low

distractibility(9). Other studies have also documented the relationship between temperament and childhood psycho-pathology(10-12).

In the present study children with conversion disorder were found to have experienced more number of life stresses and also more severe life stresses as compared to children in the control group. All children who experience stressful life events do not develop conversion disorder. Obviously, there is a vulnerability factor involved. Studies have shown that a difficult temperament operates as a vulnerability factor for internalizing and externalizing behavior problems in children while an easy temperament functions as a protective mechanism, which prevents occurrence of psychological disorders(13). Our results indicate that children with characteristic temperament develop conversion symptoms when subjected to stress. Temperament is probably acting as a vulnerability factor for development of

### Key Messages

- Characteristic temperamental traits are associated with conversion disorder in children.
- Temperamental characteristics should be considered while planning strategies to help children cope with stress.

conversion disorder in children. Genetic differences were found to account for about half of the variance in most normally distributed temperament traits(3). So it can be concluded that at least to a certain extent, the vulnerability to develop conversion disorders is genetically determined.

Parents and teachers should be aware of the influence of temperament on the behaviors exhibited by children. This will help to understand children and their behavior in a better way. While planning strategies to help children cope with life stresses, the temperamental characteristics need to be taken in to consideration. Temperamental characteristics also influence the management of children with psychological and emotional disorders.

This is a hospital based retrospective study and the sample size is small. These limitations should be considered while interpreting the results.

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*Contributors:* PK designed the study, did the psychiatric evaluation of the patients, helped in collection and analysis of the data and drafted the paper. He will act as the guarantor for the paper. PS collected and analyzed the data. LM helped in study design, analysis of the data and writing the paper.

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## Pediatric Interstitial Lung Disease

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*This study was done to ascertain the symptomatology, clinical features and investigations pertaining to interstitial lung diseases (ILD) in children. The medical records of 16 children admitted over a 4-year period from June 2000 to May 2004 with progressive cough, dyspnea, and chest X-ray/High Resolution Computerized Tomography (HRCT) abnormalities suggesting ILD were retrospectively evaluated. Clinical findings, investigations, chest skiagrams, HRCT, bronchoalveolar lavage (BAL) and lung biopsy reports were analyzed. An acute presentation of symptoms was seen in 4 cases (25%). Velcro crackles were the commonest clinical finding, present in 15 cases (93.8%). Serial X-rays revealed findings suggestive of ILD in 12 cases (75%) and HRCT was diagnostic in 13 cases (86.6%). Spirometry done in 5 cases showed a restrictive ventilatory defect, BAL analysis done in 8 cases demonstrated increased neutrophils and lung biopsy done in 5 cases was consistent with idiopathic pulmonary fibrosis. Mean survival duration of 2 years and 7 months after initial diagnosis was observed.*

**Key words:** *Bronchoalveolar lavage, Interstitial lung disease, Lung biopsy*

**I**NTERSTITIAL lung disease (ILD) is a generic term used to denote a heterogeneous group of disorders involving the pulmonary interstitium, presenting with common clinical features(1). In addition to the interstitium, alveolar and distal air spaces are also invariably involved in ILD. Though ILD occurs usually in adults, pediatric populations

do succumb to this condition.

Most children with ILD share a common presentation, with signs and symptoms of restrictive lung disease. Both noninvasive and invasive tests aid in the diagnosis of ILD but lung biopsy remains the gold standard(2). Since the differential diagnosis of ILD includes more than 100 conditions in adults