Temperament of Children and Adolescents Presenting with Unexplained Physical Symptoms

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ABSTRACT

The aims of the study were (1) To analyse the temperament of children and adolescents presenting with Somatoform disorder and Dissociative (conversion) disorder and (2) To evaluate the nosological status of conversion disorder from the angle of temperament. Temperament of 30 children and adolescents having the diagnosis of either Dissociative (Conversion) disorder or Somatoform disorder were compared with temperament of 30 matched normal control group. Temperament was assessed by using Temperament Measurement Schedule (Malhotra, 1982). We found that children with Somatoform disorder and Dissociative (conversion) disorder had characteristic temperaments of low activity, low emotionality, low rhythmicity and low distractibility. Children with Somatoform disorder were less approachable than children with Conversion disorder, otherwise temperamentally there were no differences between these two disorders.

Key words: Temperament, Unexplained physical symptoms, Somatoform disorder, Conversion disorder children.

INTRODUCTION

Children presenting with unexplained physical symptoms have characteristic features. These children are found to be insecure and sensitive (Stone and Barbero, 1970), anxious, timid, fussy and apprehensive (Apley, 1973), perfectionist and high achieving (Lask, 1986, as quoted by Garralda, 1992). It may be that children with certain temperamental traits are more vulnerable to develop unexplained physical symptoms.

Temperament received a attention from few researchers who studied its role in the process of somatization. In a group of children with recurrent abdominal pain, Davison et al (1986) found that girls had high arrhythmicity and boys had less approachability and high activity. Malhotra et al (1986) found that distractibility explained about 7% of variance in somatization in a group of Indian children. Another study reported that children with conversion disorder were less distractible than children with conduct disorder and emotional disorder (Malhotra et al, 1989). These studies on Indian children showed that distractibility had an association with somatization. Rothbart (1986) and Malhotra (1989) stated that distractibility overlaps with soothability i.e., the recovery parameter of distress. Children with low distractibility remain in distress for relatively longer periods, and they are less soothable. This state may be translated into physical symptoms.

A significant proportion of patients presenting with physically unexplained symptoms receive one of the following diagnoses: somatoform pain disorder, somatization disorder, hypochondriasis, conversion disorder etc. These disorders have a strong link to psychological factors. Such patients extensively use various medical services.

However there are certain significant differences between conversion disorder and the other somatoform disorders. Tomasson et al (1991) reviewed records of 2 years and compared conversion disorder and somatoform disorder and found that they differ substantially. ICD-10 differed from DSM IV by classifying conversion disorder separate from somatoform disorder.

Aims of our study were (1) To compare the temperament of children and adolescents presenting with Somatoform disorder or conversion disorder and a matched normal control group; (2) To specifically examine whether distractibility is a risk factor for somatization and; (3) To compare the temperament of patients with Conversion disorder and patients with Somatoform disorder.

MATERIAL & METHODS

The study was conducted in the Child and Adolescent Psychiatry unit of Christian Medical College, Vellore. Consecutive children and adolescents diagnosed as having Somatoform disorder or Dissociative (conversion) disorder were and his/her parents were interviewed by G.R., and the diagnosis was made according to ICD 10 criteria (WHO 1992). The organic causes for the unexplained physical symptoms were ruled out by a detailed physical examination, investigations and appropriate specialist consultations whenever necessary.

Inclusion criteria
1. Children and adolescents having any disorder classified under Somatoform disorder.
2. Children and adolescents having one of the following disorders classified under Dissociative (conversion) disorder category:
   a) Dissociative motor disorders
   b) Dissociative convulsions
c) Mixed Dissociative (conversion) disorder

Both 1 and 2 form 'somatizing group'.

Exclusion Criteria
1. Children and adolescents having pure Dissociative symptoms without any Conversion symptoms.
2. Children and adolescents with learning disability and co-morbid psychiatric conditions.

The tools used were
1. Structured proforma, to collect clinical and socio-demographic details in a systematic way.
2. Temperament Measurement Schedule: (TMS)
   - Based on the 9 temperament dimensions of Thomas and Chess, Malhotra and Randhawa (1982) devised this temperament-measuring instrument, which is validated and standardized on Indian children. One of the parents is interviewed about the child's temperament and scoring is done on a 5 point scale, where 3 denotes the average frequency and intensity of the concerned behaviour. TMS has 9 temperament dimensions as in the original tool. Malhotra et al (1983) get four factors: (1) Sociability comprising of approach-withdrawal, adaptability and threshold of responsiveness (2) Emotionalinity consisting of mood and persistence (3) Energy, which included activity and intensity (4) Distractibility.
3. Childhood Psychopathology Measurement Scale: (CPMS)
   - (Malhotra, 1988) CPMS is an adaptation of Child Behaviour Checklist of Achenbach (1983) validated and standardized on Indian population. It can be used as a screening instrument, children scoring less than 10 may not have any psychiatric problems. (Sensitivity 82% and Specificity 87%). We used CPMS to screen the normal control group. The apparently normal children visiting the hospital to see the relatives formed this group. CPMS was administered to the parents of these children and only those who scored less than 10 were included in the study.

We administered TMS to assess the temperament of somatizing children before the onset of the disorder and the temperament of the normal children. In both somatizing and control groups, we tried to interview both parents as far as possible.

In a comparative study of temperament Malhotra, (1989) found that children with conversion disorder were less distractible (mean score 2.78) than normal children (mean score 3.28). Based on this data we did sample size calculation, keeping alpha value of 0.05 and beta value of 0.20. We needed 30 patients and 30 controls to detect any significant difference. Statistical analysis was done using SPSS/PC+, a statistical computer package. We compared the means of the temperament factors between the groups using student's "t" test and other categorical variables were compared using Chi-square test. We also computed the number of children scoring low in distractibility temperament in both the groups. We entered the nine temperament variables one by one in the forward stepwise logistic regression analysis to predict temperament in the study group.

RESULTS

The socio-demographic details of 30 children and adolescents forming the somatizing group is given in Table 1. Females were more (63.3%) and there was a preponderance of middle socio-economic group (53.3%). Majority of the patients came from urban background (73.3%). All of them had both parents living. Except one mother who was having a chronic mental illness, none others had any chronic physical or psychiatric morbidity. The study group was matched with the control group in the variables of age, gender, education, socio-economic status, urban-rural origin, birth order, number of siblings, birth order, and parental education.

We had 16 with Somatoform disorder (Persistent Somatoform pain disorder - 11, Somatoform autonomic dysfunction - 4, Undifferentiated Somatization disorder - 1) and 14 patients with Dissociative (conversion) disorder (Dissociative motor disorder - 5, Dissociative convulsions - 6, Mixed Dissociative (Conversion) disorder - 3).

Children and adolescents in the somatizing group had low mean temperament scores in the dimensions of activity, rhythmicity and emotionality (i.e., negative mood & low persistence) to a significant level when compared to the normal group (p<0.05). The forward step-wise logistic regression analysis showed that rhythmicity (p=0.02) and activity (p=0.05) could predict the study group. More children in the somatizing group had low distractibility when compared to normal group, which was statistically significant.

Somatoform disorder sub-group scored significantly low in activity and rhythmicity when compared to normal group. When compared with Dissociative (conversion) disorder sub-group, Somatoform disorder group had scored significantly low in approach-withdrawal. There was no significant difference in the mean temperament scores of any temperamental dimensions between Dissociative (conversion) disorder sub-group and normal group.

DISCUSSION

Our study showed associations between temperament and somatization. Low activity, low emotionality (negative mood with low persistence), low rhythmicity and low distractibility were found in Dissociative (conversion) disorder and Somatoform disorder. Somatoform disorder sub-group scored significantly low in approach-withdrawal than Dissociative (Conversion) disorder sub-group.

A difficult temperament operates as a vulnerability factor for behaviour problems, while an easy temperament function as a protective factor. On studying the interaction of family functioning, temperament and behaviour problems, Tschann et al (1996) found that
TABLE 1: Demographic Data

| Variable            | Somatizing group N=30 | Normal Group N=30 |
|---------------------|-----------------------|-------------------|
| Age                 |                        |                   |
| 5-19                | 4(13.3%)               | 2(6.68%)          |
| 10-13               | 16(53.3%)              | 20(66.0%)         |
| 14-16               | 10(33.3%)              | 8(26.6%)          |
| Sex                 |                        |                   |
| Male                | 11(36.7%)              | 11(36.7%)         |
| Female              | 19(63.3%)              | 19*63.3%          |
| Education           |                        |                   |
| 1-5                 | 10(33.3%)              | 11(36.7%)         |
| 5-10                | 20(66.6%)              | 18(60.0%)         |
| >10                 | 2(6.6%)                | 2(6.6%)           |
| Socioeconomic status|                        |                   |
| Low                 | 9(30.0%)               | 9(30.0%)          |
| Lower middle class  | 9(30.0%)               | 9(30.0%)          |
| Upper middle class  | 7(23.3%)               | 7(23.3%)          |
| High                |                       |                   |
| Residence           | 5(16.78%)              | 5(16.7%)          |
| Urban               | 22(73.3%)              | 22(73.3%)         |
| Rural               | 8(26.7%)               | 8(26.7%)          |

TABLE 2: Comparison of Mean Temperament scores among different groups

| Temperament          | Normal Group N=30 | Somatizing Group N=30 | Dissociative Disorder N=4 | Somatoform Disorder N=16 |
|----------------------|-------------------|-----------------------|---------------------------|--------------------------|
| Approach-withdrawal  | 3.45(.94)         | 3.53(.90)             | 3.91(.89)                 | 3.20(.79)                |
| Adaptability         | 3.57(.66)         | 3.60(.78)             | 3.81(.82)                 | 3.41(.69)                |
| Threshold            | 3.07(.79)         | 2.70(.74)             | 2.70(.82)                 | 2.07(.69)                |
| Mood                 | 3.73(.77)         | 3.42(.69)             | 3.35(.69)                 | 3.47(.69)                |
| Persistence          | 3.58(.81)         | 3.41(.78)             | 3.44(.91)                 | 3.38(.66)                |
| Activity             | 3.25(.49)         | 2.99 (.50)a           | 3.11(.53)                 | 2.87(.46)                |
| Intensity            | 3.27(.57)         | 3.21 (.71)            | 3.08(.75)                 | 3.32(.67)                |
| Distractibility      | 3.12(.61)         | 2.82 (.72)            | 2.84 (.76)                | 2.80(.70)                |
| Rhythmicity          | 3.85(.67)         | 3.39 (.83)b           | 3.50 (.82)                | 3.30(.82)                |
| Sociability          | 10.10(1.62)       | 9.83(1.60)            | 10.42(1.50)               | 9.31(1.64)               |
| Emotionality         | 7.31(1.04)        | 6.83(0.77)c           | 6.80(0.82)                | 6.80(0.73)               |
| Energy               | 6.62(1.03)        | 6.20(1.00)            | 6.20 (1.13)               | 6.20(0.90)               |

* Somatizing group and control group; * a - t value = 2.06, p=0.044 * b-t value =2.37, p=0.021, * c - t value = 2.04, p=0.046, * (Dissociative conversion) disorder & Somatoform disorder; * d - t value = 2.33, p=0.023

TABLE 3: Children with low distractibility (Distractibility score <3)

| Distractibility score | Normal group | Somatizing group |
|-----------------------|--------------|------------------|
| 1.0 - 2.9             | 8            | 16               |
| 3.0 - 5.0             | 22           | 14               |

* Chi-square value = 4.44 p = 0.04

children with more difficult temperaments in high-conflict families had the most internalizing and externalizing behaviour problems, while children with easy temperaments had fewer such problems, regardless of levels of family conflict.

Earlier studies had identified certain specific temperaments in association with somatization. Wertlieb et al, (quoted by Carey, 1992) found that children with negative mood and low distractibility made a significantly higher rate of utilization of medical services. Increased medical utilization is a characteristic feature of somatization and in our study also those children had low distractibility. This is also in agreement with Malhotra et al (1986, 1989) who reported that children with Conversion disorder and Somatization had low distractibility. These children take longer time to come out of a psychic distress and hence this may be translated into somatic complaints. Early attempts at soothing the child might help in preventing the conversion of psychological distress into physical symptoms.

In a group of children, McClowry (1994) found that 33% of the variance of internalizing behaviours could be explained by the direct effects of negative reactivity of the child's temperament and maternal hassles; 56% of child's externalizing behaviour was directly explained by negative reactivity and nonpersistence of child's temperament and maternal hassles. We also found that in our study patients had low emotionality (negative mood and low persistence) and we hypothesize that external stresses can precipitate
somatoform disorder in a child with temperaments of negative mood and low persistence.

Davison et al (1986) reported significant arrhythmia in 30 English children with recurrent abdominal pain, which is in agreement with our study. On studying temperament and coping abilities in children, Carson and Bittner (1994) showed that activity level and approachability were good predictors of effective coping. In our study, children with somatization had low activity and low approachability, which might be associated with poor coping ability. We could not find statistical or clinically meaningful differences in the temperaments of children with Dissociative (conversion disorder) and Somatoform disorder, except in the approach-withdrawal dimension. We tend to conclude that temperamentally children with conversion disorder are similar to children with other somatoform disorders. The difference in the course and outcome of these two disorders (Tomasson et al, 1991) may due to factors other than the temperament.

LIMITATIONS

Diagnoses were made only by clinical interviews, no diagnostic interview schedule was used. CPMS was not administered for the diseased group, hence other behaviour problems could have been missed. Assessing the temperament in the presence of a psychiatric disorder (somatoform and conversion disorder) and recall bias are definite limitations. To overcome that we carefully focussed on specific situations before the onset of the disorder. Only parental perceptions of temperament were taken without any direct observations, but many studies have shown that they are valid enough. Another limitation was that the assessor was not blind to the diagnosis, which could have caused subjective bias. The sample size was not adequate for the comparisons, between Dissociative (Conversion) disorder and Somatoform disorder.

Our study supports earlier studies, which have found association between temperament and somatization and our study could predict certain specific temperaments in the role of somatization. This can be robustly confirmed by a large cohort study. If this is proved the next step in research will be management of specific temperaments to treat or prevent various somatoform disorders.

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