

ORIGINAL ARTICLE

**PSYCHOSOCIAL MORBIDITIES IN CHILDREN WITH
MEDICALLY UNEXPLAINED PAIN SYMPTOMS:
A STUDY FROM INDIA**

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Abstract

Objective: Medically unexplained pain is a common manifestation of psychological distress in children, though establishing this diagnosis is seldom an easy task. This study aimed to enhance and share clinical insights in the complex interplay of medical and/ or psychological factors in these children as revealed by multidimensional assessment, to help in their effective management. **Methods:** Researchers assessed 65 consecutive children with unexplained pain for more than a month, referred by pediatrician. Of these, 59 consented and completed the interview. Clinical interview by psychiatrist generated psychiatric diagnosis as per ICD – 10 research criteria. Global functioning of the child (CGAS) and relational functioning of the family (GARF) were assessed before and after treatment. Psychosocial stresses were assessed clinically and treatments given to child and/or parent were recorded. Psychologist assessed intelligence of the child using Raven's Coloured Progressive Matrices and administered Children's Apperception Test (CAT). **Results:** A total of 38 (64.4%) children fulfilled criteria for Persistent Somatoform Pain Disorder. Most of them (89.8 %) were undergoing personal, familial and social stresses, many of which were revealed only after detailed clinical assessment. Major depression (28.8%), intellectual subnormality (11.9%), non-organic enuresis (8.5%) and ADHD (8.5%) were common co-morbid psychiatric diagnoses. Children with varying intellectual levels were proportionately represented, and colored the clinical complexity. Repression and reaction formation were common defenses and fear of loss of love of parent, injury, being overpowered were common fears as revealed on CAT. **Conclusion:** Unexplained pain was often a somatic expression of emotional needs in these children. Psychosocial adversities were common and often causative. However being subtle, these were routinely unidentified. Precise assessment is the key to effective management of these cases. *ASEAN Journal of Psychiatry, Vol. 16 (1): January – June 2015: XX XX.*

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Introduction

Medically unexplained pain symptoms are common in children and often persist long enough to affect their daily routine, health and development. Various psychosocial morbidities accompany this multifaceted

condition. This necessitates a flexible, multi-level approach in the management. A descriptive study of psychosocial adversities in these children is likely to explore clinical complexities in these cases, which will help in better understanding and effective treatment. In absence of discrete physical as well as

psychiatric signs and symptoms, these cases are vulnerable to receive inaccurate management by clinician, pediatrician or psychiatrist. Ongoing vigilance about developing somatic or psychological or simultaneous problems is necessary. This comprehensive understanding would ensure optimal treatment of these children.

Though medically unexplained, these physical symptoms are valid illnesses, often indicative of psychological distress. However they are often perceived negatively, even by staff in medical setting. The children who get referred frequently for investigations and treatment also get more anxious about their physical disease [1, 2]. A study reported depression to be more common in children with medically unexplained pain than in those with medically explained pain [3, 4]. Association of such recurrent pain in childhood and anxiety disorders in adulthood has been reported in the literature [5]. These facts prompted us to undertake this research in this area, which has not been well studied, especially in the Indian setting.

This descriptive research aimed to document detailed bio-psycho-social perspective in each of these cases so as to develop better insights in clinical assessment and management of this complex clinical condition. Objectives included evaluation of impact of unexplained pain by objective assessment of functioning, documenting stresses and assessing role of intellectual level in perception of these stressful events, and assessing relational functioning of the family in these patients.

Methods

This hospital based study was carried out in the Psychiatry Department of Smt. Kashibai Navale Medical College General Hospital situated in Pune, a rapidly growing city in Western India. This institute caters free medical services for the community. Study proposal was submitted to the Institutional Ethical Committee and approval was obtained. This was an observational study of detailed clinical assessment and treatment response of children with medically unexplained pain symptoms (MUPS). Children in the age group of 7 to 12 years, with one or more medically unexplained pain symptoms, referred by

pediatrician to child psychiatry clinic were included in this study. Pediatrician had assessed for and ruled out medical or surgical cause of pain, and suspected functional etiology.

Consecutively all such patients referred from pediatrics department were briefed about the study and enrolled if they consented. They were required to attend 3 sessions of 45 min. each for assessment. Six of them refused to participate or could not complete the assessment, but had similar socio-demographic profile as that of study population.

Children with medically explained pain symptoms, diagnosed cases of Mental retardation and those with single, transient pain symptom of less than 1 month duration were excluded.

Psychiatrist and psychologist assessed the patient after obtaining written consent of the parent and assent of the child. Treatment given and treatment response at subsequent visits were also documented over a period of 6 weeks.

Sample

A total of 65 consecutive children were referred from pediatrics department, with pain of at least one month duration, occurring during the study period. Pain was not explained clinically on medical examination, as well as after doing thorough investigations. 59 patients consented and completed the interview over a period of 15 months.

Data collection

Investigators (VG and SD) interviewed the patients after taking informed consent of the parent and assent of the child. Clinical psychologist (NB) assessed each child on test for intelligence and on Children's Apperception Test.

Socio – demographic data, illness related psychosocial information of parents and child, pediatrician's opinion along with investigations done and treatment recommended was recorded in a semi-structured proforma. Clinical information was recorded to establish clinical diagnosis as per ICD – 10 DCR [6]. Primary as well as co-morbid diagnoses were established. Children's

Global Assessment Scale (CGAS) [7] and Global Assessment of Relational Functioning Scale (GARF) [8] were administered to assess functioning of child and family.

GARF has been reported as a valid scale for assessment of relational functioning as a part of axis V of DSM IV [8, 9]. It is a clinician rated scale, wherein functioning of an individual is rated on a continuum from excellent to grossly impaired functioning. Score is recorded as single number between 100 – 0. Semi-structured questionnaire rating GARF has been developed and used earlier by author (SD) [10]. Authors (SD, VG) administered GARF; as such assessment of familial functioning with objectivity is seldom undertaken in routine practice, though it is often the root cause in such cases. CGAS [7] is commonly used to document overall functioning of a child; it depicts the severity of disturbance on a Likert scale that assesses functioning of a child in school, family, and difficulties encountered therein. with established inter-rater reliability and validity [11]. As transient pain symptoms are common in childhood, impact on functioning was measured to reveal resulting disability.

Clinical psychologist assessed each child's intelligence on CPM (Colored Progressive Matrices) (Raven J et al 1998) [12]. This test can assess intelligence of child in terms of cognitive abilities, logical and analytical thinking in about 30 minutes time. Children's Apperception Test (CAT) is a projective test designed for children. Children are asked to narrate/ write stories about standardized pictures shown to them. This is an apperceptive method of investigating personality and defenses in a child (Bellak L 2008, Indian adaptation by Uma Chowdhary) [13]. Administering this test helped in understanding child's drives, relationships with important persons, and defense

mechanisms used. A total of 40 children (67.8%) were followed up at 6 weeks. Their improvement in terms of severity or persistence of pain and increase in CGAS score was recorded. Relational functioning of the family (GARF) after pharmacological treatment and psychological inputs was also noted.

Results

Persistent Somatoform Pain Disorder (F 45.4) is diagnosed on ICD - 10 DCR if medically unexplained pain, which is associated with emotional conflict or psychological problems, persists for more than 6 months [6]. Among 59 children who completed the study interview, 38 children (64.4%) fulfilled criteria for Persistent Somatoform Pain Disorder.

Sample included 28 boys and 31 girls, maximum (40 of 59) being 10 – 12 year olds (67.8 %). 39 (66%) children were from urban, 7 (12%) from semi-urban, and 13 (22%) from rural areas. 34 (58%) children were staying in nuclear family, 13 (22%) in joint family and 12 (20%) had a broken family, a relatively large number.

Thirty one children (54.2%) reported headache (most common site of pain in this study), followed by abdominal pain reported by 28 children (44.07%) and chest pain by 16 children (27.19%). Eight children (13.5%) reported pain at multiple sites. Site of pain may have symbolic meaning, may be determined by role modeling, or may be unexplained.

Triggering stressors

One or more triggering stresses in these children as assessed by clinician (SD, VG) are compiled in Table 1.

Table 1. Psychosocial adversities associated with unexplained pain symptoms

Category of stress	Number of children (multiple responses)	Percentage (%)
Separation from significant family member	22	37.29
Parental interpersonal problems	16	27.12
Academic problems	12	20.34
Interpersonal problems of child	10	16.95
Harsh punishment	10	16.95
Change of school	7	11.86
Physical illness in family	7	11.86
Familial responsibilities	6	10.16
Bullied by peers	4	6.78

We can see the preponderance of stresses in the familial relationships domain. Thoughts pertaining to the stresses were distressing to these children and expressed with dysphoric feelings when probed into. Often, apparently normative events like change of school or residence or change in care-taking arrangement, various hurts or insults were the unrecognized stresses. A study of socio-cultural contexts of these children helped in revealing many “hidden” upsetting events. Presence of academic problems was associated with subnormal intelligence, or failure to achieve expected ranks in intelligent children.

Intellectual level of participating children is tabulated in Table 2.

We can see the representation of a wide range of intelligence from superior to below average level. Parents were often unaware of the subnormal intelligence of the child, and the likely resulting stresses. Also in case of children with good intelligence, parents had failed to understand the distress of a sensitive child aroused by apparently minor hurts. This was because there were no overt stressors and everything seemed to be absolutely “well!”

Table 2. Intelligence assessed by Raven’s CPM test

Percentile rank on CPM	Number (N = 58)	Percentage (%)
Superior (>90)	8	13.56
Above average (76 – 90)	8	13.56
Average(51-75)	16	27.12
Low average(25 -50)	18	30.51
Below average (5 -24)	7	11.86
<5	1	1.69

Dysfunction caused by pain symptoms

Decline in academic performance after onset of pain was seen in 33(55.93%) children. A total of 13 children (30.5%) were irregular in attending school and 4 (6.77%) were school drop-outs due to pain. Sleep disturbances were seen in 22 out of 59 (37.3%) of children, and

change in appetite seen in 27 (47.8 %) children. We documented child’s global functioning and relational functioning of family before and after treatment to assess the effectiveness of routine psychiatric help offered in such cases [Table 3(a) and Table 3(b)].

Table 3 (a). Child's global functioning and relational functioning of the family before and after treatment (CGAS 1& 2, GARF 1 & 2)

Scale used	Mean score	Median score	SD	CV (%)
CGAS-1	53.32	51	10.54	19.76
CGAS-2	60.42	61	11.39	18.85
GARF-1	50.92	50	15.45	30.32
GARF-2	52.88	51	17.23	32.58

(SD = Standard deviation, CV = Coefficient Variation)

CGAS- 1 score of the child at the time of first presentation

CGAS – 2 score of the child after a month of treatment from psychiatrist and psychologist

GARF – 1 score of the family at the time of first presentation

GARF - 2 score of the family after a month of treatment from psychiatrist and psychologist

Table 3 (b). CGAS before and after treatment

CGAS score range	Number of children (before treatment) (N = 59)	Percentage	Number of children (after treatment) (N = 40)	Percentage (%)
80-71	3	5.08	6	15.38
70-61	11	18.64	14	35.89
60-51	21	35.59	13	33.33
50-41	19	32.20	5	12.82
40-31	5	1.47	1	6.7

(CGAS = Children's Global Assessment Scale)

GARF scores did not improve much after treatment of about a month. We could not follow up the patients thereafter, which is one of the limitations of this study. CGAS scores improved after treatment in most of the children. Though rise in mean CGAS score

was only by 7 (53 to 60), after treatment 34 out of 40 (80.5%) children were having scores above 50 (Table – 3b). Various psychiatric co-morbidities in these children have been tabulated in Table 4.

Table 4. Psychiatric co-morbidities with medically unexplained pain

Diagnosis as per ICD – 10 DCR	Number (N = 59) of children	% Percentage (%)
Mild depressive episode	17	28.81
ADHD, mixed type	5	8.47
Nonorganic Enuresis	5	8.47
Childhood emotional disorder	4	6.78
Adjustment disorder	3	5.08
Dissociative motor disorder	2	3.39
No co-morbidity except pain disorder	26	44.07

Discussion

Psychological distress and defense mechanisms in these children were studied with the help of C.A.T. Children were asked to tell stories based on the pictures, which encouraged verbalization of their prominent emotions. Most of the children participated actively in this test; it also had a therapeutic effect by way of ventilation of distressing emotions in a supportive environment. In their stories, 90% of the children depicted themselves as “hero” and reflected on their own needs, conflicts, fears and anxieties. This test did not yield significant results in case of intellectually subnormal children.

These children often had precipitating stressors like parental separation, punishment by parent, or distress due to not reaching up to parental expectation. Fear of harm or injury, fear of loneliness or being overpowered were the most common fears reported. Fear of loss of love of parents and insecurity feelings resulting from this were also reported. The most common psychological defenses used were rationalization (31.57%) and reaction formation (29.94%). This was followed by denial (21.05%), and regression (23.68%). This test helped in identifying underlying conflict, and deciding necessary psychological intervention in many cases.

Maximum number of children presented at about 10 - 12 years. Studies conducted earlier conform to this age range [14, 15]. Research studies vary in their reports about MUPS being more common in either gender [5, 15].

However, we had comparable number of boys and girls in this sample of consecutive patients.

Diagnosis of functional pain symptoms in children

It is seldom an easy exercise to label pain symptoms in a child as functional. Even in absence of any clinical signs, child needs to be investigated in view of severity of symptoms and disability caused by pain. Presence of anxiety or depressive features does not exclude possibility of medical illnesses. Ongoing vigilance about all organic probabilities of pain symptoms is definitely indicated. Similarly, unindicated treatment with NSAIDS may harm the child's health. Careful assessment is needed to establish this diagnosis [5]. Psychosocial factors are known to play an important role in causation, maintenance, clinical severity and management of these pain symptoms. These complex problems are thus best dealt with by management by psychiatrist in liaison with pediatrician. At times both may co-exist. Some of the children in this study had suffered organic causes for pain like pain in abdomen due to acid peptic symptoms, or headache due to sinusitis and so on. However, pain symptoms during current presentation were not explained by these causes as per pediatrician's assessment and were thus referred to psychiatry department. 17 of the 59 children in this study had such dual problems. Among these 5 (29.4 %) had depressive episode as against 12 out of 42 (28.5 %) without any medical co-morbidity (Chi square

= 0.0639, $p = 0.08004$). Other psychiatric co-morbidities were also comparable. Psychiatric illnesses have been reported to be more common in children with medically unexplained pain than those with medically explained pain in literature [15].

Psychosocial stresses

Difficulties in coping with conflicts and stresses, familial and school related problems, unsatisfying child-parent relationships are well known in children with “Psychogenic” pain [16, 17]. Separation from parent or grandparent for a significant period of time was the most common stress found to be triggering pain symptoms in children (Table - I). Parental interpersonal problems were also often assessed to be more stressful than reported. Children were distressed by alcohol dependent fathers, depressed mothers or parental quarrel, but were seldom able to verbalize or even recognize it.

A study of stresses in Indian children with and without psychiatric illnesses revealed more number of events in the affected children, and included mostly stresses like parental deprivation, punishment and school related problems [18]. The paper also mentions the need to develop ways to assess perceived stressfulness of events. In a recent Indian study in children with deliberate self harm, 62% children had some stress in the family and 41% in school [19]. Disturbances in emotional well-being seem to be central to these stresses, *but in our study stresses were often subtle and at times unrecognized.*

Academic problems were primary in some children, and were secondary to school absenteeism or depression in others. Children themselves often reported bitterness and dislike for some relatives or friends resulting in various interpersonal problems. Dominating father figure, scared child figure, perceived rejection from parent figure, aggression towards sibling or friend, escapism from overwhelming situation were some of their expressions in the stories narrated during C.A.T. In absence of such assessment, labeling pain as functional would have been “difficult.” These fears need to be interpreted in the context of high intimacy and dependency between child and parent in Indian culture.

Children view parents as an authority, as well as the source of emotional support and gratification. The most common psychological defense used was rationalization (31.57%), which is the neurotic defense used in situations where the child could not understand how to cope with real life stress or situation. That is normal for the age group in this sample. Reaction formation (29.94%) and denial (21.05%) were used against need of affection and dependence. This also suggested their awareness of painful reality. Defense like regression (23.68%) in difficult situation, suggested their problems were unresolved in real life.

Psychiatric co-morbidities and functioning

Medically unexplained pain is known to be associated with increased anxiety and depressive disorders [5, 15, 16]. 44% children in this study had no such co-morbidity (Table – IV). Functional nature of pain in such cases is difficult to establish and confirm. It would need enough expertise and experience even in qualified psychiatrists. Such pain has been called “idiopathic” in a study on 300 children with chest pain, in which 63.4% had such idiopathic pain [20]. Co-morbid diagnosis of conversion disorder was made in only one patient. Rare co- occurrence of somatoform and dissociative disorder is reported by Dr Malhotra in her study on 118 patients [21]. Depression in adults is often associated with functional pain symptoms. In 17 out of 59 children (28.8 %), mild depressive episode was detected (Table – IV). The diagnosis was made clinically with ICD -10 diagnostic criteria for research. Other disorders were mainly belonging to neurotic spectrum and five had Attention Deficit Hyperactivity Disorder.

Parents of these children suffer poor health and emotional disorders more commonly than the general population [3]. So also, these children with Somatization often have history of maltreatment from parents [22], which has been subtly reported by children in this study. In this study, psychopathology in parents could be detected in 27 (45.8%) of the patients.

Management implications

The diagnosis of somatoform pain disorder is

difficult to establish and confirm especially in the case of children. The risk of developing organic condition does remain, as in the case of any other child. These children often have high levels of anxiety. These may cause exacerbation of existing physical vulnerabilities leading to organic pain as in acid peptic disease (abdominal pain, headache), exacerbation of asthma (chest pain) and so on. Use of unwarranted medications like NSAIDs in these cases may also pose a risk to health of a child. Identifying the importance of underlying psychogenic etiology is thus imperative.

The pain had significantly affected functioning of the child. CGAS scores point to moderate interference in global functioning of the child, which improved after treatment (Table 3). Thus intervention by mental health specialists was helpful and effective. Relational functioning was severely affected in many families, but 30% variation (CV) was seen. Some families seem to have severe interpersonal problems, whereas some are unaffected. Though child's functioning improved to some extent with treatment, improvement in GARF score was not observed. Perhaps, improving GARF score is a long term task, necessitating ongoing psychological inputs.

Parents of these children are often suffering various physical and mental health problems, which should be managed for better and lasting recovery of these children. Differences in clinical presentation and effective management were noted across varying intellectual levels, which has been described by authors in an earlier paper [23].

A model for management of Pediatric Somatization has been recommended by Campo J and Fritz G (2001) and by Kazia [5,24], which highlights the complexities and multiple dimensions of management of these cases. There is need of a similar model to be developed and adapted for Indian setting, by undertaking a bigger long term study.

Conclusion

Medically unexplained pain in children is a common and complex problem to manage, often chronic, and causing significant

dysfunction for the child. Psychiatric comorbidities were seen in 55.9% of these children in this study, depressive and neurotic disorders being most common in addition to somatoform pain disorder. This result is comparable to other studies conducted outside India. Parents often suffered psychopathology, necessitating their treatment along with the child. Familial adversities, separation and interpersonal problems were the most frequently reported stressors, followed by academic problems. Stress experienced was often subtle and unrecognized by patient, relatives and clinicians alike. Treatment was effective, especially in improving functioning of child emphasizing the importance of identification and management of these cases.

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Disclosure

The authors report no proprietary or commercial interest in any product mentioned or concept discussed in this article.

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