

# The Role of Inadvertent Reinforcement in Somatization in Children: A Clinical Case Study

Angana Mukherjee

Consultant Clinical Psychologist, The Reach Clinic, Koramangala, Bangalore, India

**Abstract-** The present case study outlines in detail, the effectiveness of the Applied Relaxation technique, combined with some of the cognitive and behavioural strategies, in management of tension-type headache, of a 9 year old boy, referred to here as "Manoj". The total number of sessions conducted were 12, with follow up sessions being continued. The main aim of the treatment sessions was helping Manoj and his parents to identify the role of psychological factors in causation of the headache; reducing distress associated with the problem of anxiety and also being able to use relaxation during everyday activities apart from the current concern. The results corroborated with the previous findings of use of applied relaxation with tension-type headache in paediatric cases. The role of maintaining factors in persistence of further occurrence of similar somatic complaints are also reflected upon.

**Index Terms-** Applied Relaxation, Tension-type Headache, Headache, somatic complaints, maintaining factors

## I. INTRODUCTION

Children during their school age, are often seen to be complaining about stomach pain, frequent headaches and/or knee pain. Often parents get concerned about their frequent somatic complaints and they are seen to consult general physician for help. It is seen that many a times they are referred for psychological help rather than any medical or pharmacological assistance by the physician. But even though no organic cause can explain the somatic complaints, parents find it difficult to accept the fact that psychosocial factors might be responsible in causation of these somatization in their children (Sharpe and Mayou, 2004). So it is a common scenario that children and adolescents get referred to psychological help for their somatization or conversion symptoms, pain, adjustment to chronic illness and/ or preparation for anxiety-provoking medical and/or dental problems (Carr, 1999).

### Development of the concept of illness and pain in children:-

Children's understanding of the concept of illness can be corroborated with Piaget's theory of cognitive development (Carr, 1999). Their ability to comprehend the cause of their illness or pain progresses through a series of developmental stages. Several factors like cognitive maturation, their learning experience and/or exposure to their own illness or their caregivers', act as determinant factors in their ability to comprehend the perception of illness or pain (Bibace and Walsh, 1979; Mc Grath, 1995).

Children are able to comprehend the concept of illness and pain even prior to age 3. Even below 3 years of age they can comprehend illness and/or pain as a "single-symptom" and the causes to be "remote" or external. For example, often they are seen to hit the floor with their hand or scold the table as if the latter have made them fall or hurt them. They can even express their pain verbally and even localize the pain that hurts them. They are also able to identify the pain in others. Children of this age has the ability to comprehend that their experience of pain can also be eased either by asking for medicine, by showing it to others or by receiving hugs and kisses from the caregivers. Gradually they learn to give elaborate description of their pain and also learn to attribute pain to some external causes. (Carr, 1999).

The understanding of "illness" in terms of "single-symptom", continues till about 5 years of age. Between 3 and 5 years of age, children can understand the concept of "contagion" in causation of diseases. Children at this age often wonder that illness might be a kind of "punishment from God" for some of their wrong doing. This type of magical thinking or idea persists as a feature of children's thinking even into teenage years, with transition occurring between 5 and 7 years of age to "concrete operational thinking" (McLeod, 2012). Gradually most children learn to develop a more "sophisticated" idea or perception about the symptomatology and the aetiology of illness. By this time they can even indicate the intensity of their pain (Hester, Foster and Kristensen, 1990). Between 7 and 10 years of age children can even explain why pain hurts. They are by this age, more capable of distinguishing between levels of pain, intensity and can indicate the fluctuations in their pain experiences. (Brieri, Reeve, Champion and Addicoat, 1990).

With progressing towards the formal operation stage of thinking (McLeod, 2012), children are able to give a more elaborate physiological explanations of illness and can even explain the adaptive value of pain for protecting people from harm (Carr, 1999).

### Classification

Individuals often mistakenly seek medical assistance in spite of the fact that their incapacitating physical discomfort is not a result of some organic cause (Campo and Fritsch, 1994). Paediatric physicians also encounter such somatic complaints which does not have any physical basis. (Campo and Fritsch, 1994; Garralda, 1992). However, the task of diagnosing a child with somatisation often becomes complicated, as lot of other factors needs to be considered, including medical and psychological factors. (Fritz, Fritsch and Hagino, 1997; Campo, Jensen-McWilliams, Comer, Kelleher 1999; Walker, Garber, and

Greene, 1991; Campo and Fritz, 2001; Shapiro and Rosenfeld, 1987; Silber and Pao, 2003).

In case of children it is often noted that somatisation can occur in the form of a “single-symptom” somatisation or a “multi-symptom” somatisation whereas the latter is more common than the former one. However, even though multi-symptom somatisation occurs, it often clusters around a central complaint, like that of head, stomach or limb pains. Often with headache as the chief complaint, it is usually accompanied by chest pain, breathlessness, a pounding heart and/ dizziness. (Carr,1999).The idea of single symptom complaint can also find its expression in a variety of ways, with one symptom such as headache, might be predominant in one case and another symptom such as abdominal pain or knee pain, in the other. The symptomatology and the aetiology of the somatic complaints might be conceptualized as falling along a “continuum from physiological to psychological” in nature (Carr,1999). In the present case study, Manoj came with the complaints of frequent headache. Before going in detail with the case history, types of headache needs to be considered.

### Types of Headache:

Two types of headache can be distinguished: tension headache and migraine headache.

Tension headaches are usually very frequent, bilateral, accompanied by dizziness and experienced as “tight band”, a “heavy weight” or a “fullness in the head”. Tension headaches are usually associated with stressful, anxiety-provoking situations at home or at school. This might lead to muscular tension in the muscles of the neck, shoulders and head which in turn might lead to pain. (Carr,1999)

Migraine is periodic, severe and unilateral, accompanied by a visual aura, nausea, vomiting and photophobia. The exact incidence is unknown. A family history of migraine among children with migraine is very common. Migraine attacks usually follow a clear precipitant such as excitement, stress, eating certain foods such as chocolate or cheese or exposure to stroboscopic effects like television, cinema or strobe lights (Carr,1999).

In case of children, it becomes difficult to distinguish between tension headache and migraine headache as in some cases they co-occur or children with tension headache develop migraine later in their life. Studies have revealed that the onset of migraine rarely occurs before the age of 9, while tension headache can occur in very young age. However, the “categorical classification” is rejected by most researchers and they argue that tension headache and migraine headache are “two ends of a continuum”( Williamson,1993).

### Clinical features

The main feature of somatoform disorders is “repeated presentation of physical symptoms, together with persistent requests for medical investigations, in spite of repeated negative findings and reassurances by doctors that the symptoms have no physical basis. If any physical disorders are present, they do not explain the nature and extent of the symptoms or the distress and preoccupation of the patient. Even when the onset and continuation of the symptoms bear a close relationship with unpleasant life events or with difficulties or conflicts, the patient

usually resists attempts to discuss the possibility of psychological causation; this may even be the case in the presence of obvious depressive and anxiety symptoms. The degree of understanding, either physical or psychological, that can be achieved about the cause of the symptoms is often disappointing and frustrating for both patient and doctor.

*In these disorders there is often a degree of attention-seeking behaviour, particularly in patients who are resentful of their failure to persuade doctors of the essentially physical nature of their illness and of the need for further investigations or examinations.”*

- References: Adapted from ICD-10: World Health Organisation. The ICD–10 Classification of Mental and Behavioural Disorders. Geneva: WHO, 1992

### Prevalence studies

Global prevalence rates for somatic complaints in children and adolescents range from 13.1% to 28.3% (Lehmkuhl, Döpfner, Berner, Fegert, Huss, Lenz, Schmeck, Lehmkuhl, Poustka, 1998). Contingent upon the methods used and the population considered, somatisation problems in children and adolescents fluctuate between 2% and 10% of cases with headaches being common among children’s and adolescent’s complaints. (Williamson,1993; Eminson et al., 1996; Garralda, 1996). About 70% of children and adolescents have occasional headaches, with frequency of experiencing headache increases with age. Headache has been found to be more common and severe among girls than boys in about 1-2 percent of the paediatric population (Carr,1999)

Studies conducted on the prevalence rates of headache on children and adolescents revealed that 1 month and lifetime prevalence rates is 58.4% (95% confidence interval [CI] 58.1–58.8). However, it was found that females are more likely to have headache than males also indicating differences in gender, age and regional differences in global prevalence. (odds ratio [OR] 1.53, 95% CI 1.48–1.6) (Abu-Arafah, Razak, Sivaraman and Graham, 2010).

Another study conducted by Arruda, Guidetti, Galli, Albuquerque and Bigal (2010) revealed that “infrequent episodic tension-types” headaches are prevalent in 2.3% of children between the age of 5 and 12; “frequent episodic tension-types” headaches happened in about 1.6% of children and “probable tension type” headache in about 13% of the cases indicating a high prevalence of primary headache in young children.

In another study it was found that about 57.5% of the adolescents reported recurrent headaches whereas, migraine was reported by at least in about 17.2% of cases. “Unspecified type of headache” was found in about 14.9% of cases and tension type headache in 11% of children and adolescents, with females gender found to be suffering more (p=0.018) than male. Increasing age was also found to be associated with experiences of headache, particularly migraine. The onset of headache was found to be at around 11.33 years of age (10.72 years in girls vs. 11.75 years in boys; p < 0.001). About 37.1% of the adolescents also complained of progression of headache since its onset. However, other characteristics of headache were not found to be dependent upon gender. This study also revealed that

headache was more prevalent in higher grades. (Gupta, Bhatia, Dahiva, Sharma, Sapra, Semalti and Dua, 2009)

One study conducted in Shiraz including schoolchildren of 6 to 13 years old, also confirmed that the overall prevalence of headache was 31% with tension-type headache prevalence in about 5.5% of the cases. However the prevalence of headache increased with age and girls were significantly more likely to report tension-type headache (Ayatollahi and Khosravi, 2006).

Several studies were conducted on the nature of headache and the factors responsible in causation of headache in children and adolescents. The clinical features of headache in most children mostly resembled the Chronic Tension type headache as found from the study conducted in India (Chakravarty, 2005). 60.9% of the children between 3 and 15 years old described their headache as "mild", 36.5% described it as "moderate" and 2.6% described it as "severe". With respect to localization of headache, 53% experienced their headache at the forehead and 29.6% over the whole of the head. 73.9% described their pain due to headache as "just sore" or "dull". About half of the children often reported "light intolerance", "noise intolerance", "anorexia or nausea" especially during the attacks of headache. It was also reported that at least 32% percent of the cases had some underlying chronic disease that might have contributed for the headache. At least 11% had serious family related stressful life events and in 4 cases headaches were triggered by family bereavement. It was also found that the clinical features were consistent with those of adult population along with presence of some predisposing stressful risk factors, physical and/ or emotional factors also was responsible for headache in children and adolescents (Abu-Arafah, 2001).

### **Comorbidity**

The "recurrent, medically unexplained physical symptoms" associated with other psychiatric symptoms are very common in paediatric age group (Campo and Fritsch 1994). Results of previous studies showed that children classified as "paediatric somatizers" were associated with family dysfunction, functional impairment, poor academic performance and school attendance, perceived health impairment, and frequent consultation of health services. (Campo, McWilliams, Comer, Kelleher, 1999).

In India, academic stress and achievement was found to be directly related to heightened anxiety in majority of children leading to headache and other somatic complaints. The clinical features of tension-type headache in children was also found to be different from that of adults as vast majority of clients exhibited overlapping features of migraine and tension-type headache. (Chakravarty 2005).

### **Theoretical Perspectives:**

#### **Biological Perspectives:**

According to the Biological Vulnerability theory, due to certain developmental history or genetic predisposition, some children when exposed to stress and/ or infection, might develop somatic symptoms which might be associated with their biological vulnerability or dysfunction of some specific organs or biological systems (Lask and Fosson, 1989). However, the nature of the symptoms can however be determined by the biological vulnerability (Gross and Drabman, 1990).

From the perspective of the General Adaptation Syndrome Theory, an accumulation of stress, regardless of the type, might lead to a "generalized stress response" or the so-called "General Adaptation Syndrome" (GAS) (Selye, 1976). The symptom usually begins with an alarm stage (autonomic arousal) followed by the resistance stage, (physiological hyper-arousal is maintained) and finally the exhaustion stage (body's immune system functions poorly and vulnerability to stress and infections is greatly increased). However, the same stressor has different manifestations in different people (Sarafino, 1994; Lask and Fosson, 1989) which is also followed by variances in coping strategies of different people (Turk, Meichenbaum and Genest, 1983).

#### **Psychological Perspective:-**

Freud's psychoanalytic perspective explains that anxiety aroused by an unconscious conflict is converted into physical symptoms. The physical symptoms are more acceptable and tolerable than the unconscious conflicts which act as a way of avoiding the psychological distress. The "primary gain" derived from these conversion symptoms is anxiety reduction and the "secondary gain" is that they allow the child to avoid unpleasant activities and appeal compassion from others (Carr, 1999).

Psychosomatic Theory explains that some children might have difficulty in acknowledging and expressing their emotions (Alexander, 1950) and in due course of time might have learnt, that 'illness' is a means of expression. These conversion symptoms and chronic pain thus allow children to communicate distressing emotions such as anger, jealousy, envy, guilt, anxiety and/or depression, to others, which they otherwise might have difficulty in expressing (Carr, 1999).

Stress and Coping theory explains somatic complaints in the following way. Adjustment to the chronic strains caused by an illness depends upon the balance of risk factors (like illness related parameters, functional independence, and psychosocial stressors) and resistance factors. Resistance factors fall into 3 categories: interpersonal factors (competence, easy temperament and problem solving abilities); sociological factors (family environment, social support and material and economic resources) and stress-processing factors (cognitive appraisal and coping strategies) (Drotar, 1992; Wallander and Varni, 1992, 1998; Varni, Katz, Colegrove and Dolgin, 1996).

According to the Family Systems Theory, specific maladaptive family processes like enmeshment, disengagement, overly rigid, or flexible boundaries, triangulation, marital discord, and responsiveness to illness etc., determine the extent to which children develop somatization or conversion symptoms or develop adjustment problems to chronic illness. Certain exposure to family culture of distress, being expressed somatically or where sick-role behaviour elicits care and attention might also lead towards development of somatic complaints of the child. However, the severity and specific manifestation of the symptoms will also depend on the child's personal psychophysiological reactivity and physiological vulnerabilities. (Wood, 1994, 1996; Carr, 1999).

Behavioural theory: Conversion symptoms, chronic pain and adjustment problems associated with chronic illness are often reinforced knowingly or unknowingly, by rewards associated with these illness behaviours, symptoms or the sick-role

behaviours (Fordyce,1976). These reinforcers might include keeping the child out of difficult relationships; helping the child avoid difficult work or school situation and eliciting attention that might otherwise be withheld. The child's specific environmental or interpersonal relationships can act as cues for future onset of episodes of illness behaviours (Carr, 1999). Cognitive-behavioural Theory explains pain in the following way: When exaggerated beliefs, that individuals might have about the nature of the symptoms or illness, might result in "confirmatory bias" with respect to illness-related information. As a result they might selectively attend and respond to information which is consistent with their negative beliefs about the problems (Hawton, Salkovskis, Kirk, and Clark, 2001).

## II. PSYCHOTHERAPEUTIC TREATMENT APPROACH

For Manoj, a family-based approach was followed mostly including psychoeducation, a reduction of environmental stresses within the family, family based contingency management and pain-management skills training and certain cognitive techniques.(Williamson, 1993; Campbell and Patterson, 1995; McGrath et al., 1990; Sanders et al., 1994).For Manoj, the 'stressful' events were leading to increase in physiological arousal in him and also precipitating, maintaining, and/or exacerbating the headache. For this reason, training in tension-reduction skills was a core element in the treatment programme. Progressive muscle relaxation was taught to Manoj in the initial sessions. This was followed by some self-management skills (e.g. self-instructional technique or cognitive self-statements), and training for parents in how to prompt and reinforce his self-help behaviors (contingency management) and guide him in the relaxation exercises (Carr, 1999).

The results of previous studies revealed that when Applied Relaxation was used in treating different phobias, panic disorder, headache, pain, epilepsy, and tinnitus, showed significantly better results than no-treatment, or attention-placebo conditions. Applied Relaxation can also be considered as effective as other behavioural methods. In case of follow-up studies, after 5–19 months, the effects were maintained, or further improvements were obtained (Öst, 1987).

Relaxation training is also considered to be a sustainable treatment approach especially for school-based children with chronic tension-type headaches. Results of studies showed that headache, in children who were treated with relaxation training, significantly reduced when compared to those who were not given any treatment. A 6-month follow up also revealed that at least a 50% improvement (Larsson and Carlsson, 1995).

Relaxation is a well-established and efficacious treatment for recurrent headache specially in case of recurrent headache in paediatric population. (Holden, Deichmann and Levy,1999).

## III. CASE HISTORY

Master "Manoj" is a 9 year old boy, currently studying in class IV, belongs to a middle-class Hindu, nuclear family. He is the first son of his parents and has a younger sister who is 4 years younger to him. Manoj was brought by his parents with the chief complaints of headache, lack of concentration in studies, easily

getting angry and agitated, hitting his sister at times, for last 6-7 months. His academic performance also deteriorated for last 4-5 months. According to Manoj, he was scared to go to school as his friends teased him about his poor performance in his academics. He was afraid of being scolded by his teachers and/or any authority figures. He would often seek for reassurance as he was unsure and was confused while doing his activities. Precipitating factor was identified as poor performance in his previous examination, 10 months back, followed by a parent-teacher meeting and scolding from his parents, especially by his father. Past history revealed 2 years back he had similar type of headache which subsided with medications. Family history suggested features of anxiety in both the parents. Developmentally his milestones were attained at appropriate ages. Temperamentally, Manoj was shy, sensitive to criticism and was often nervous while interacting with others. Behavioural observation revealed appearance well kempt and tidy, eye contact maintained; rapport could be easily established as attitude towards the examiner was cooperative. Motor behaviour was found to be normal. Speech was relevant, coherent and goal directed. However, he spoke only when questioned in the initial sessions. Attention could be easily aroused and sustained for an appreciable period of time. Memory was intact with average intelligence. Subjective and objective affect was found to be anxious.

On the basis of the case history and behavioural observation, Persistent somatoform pain disorder (F 45.4) was given as a Provisional diagnosis (World Health Organization,1992)

### Points in Favour for the above diagnosis is as follows:--

- persistent, severe, and distressing headache
- could not be explained fully by a physiological process or a physical disorder
- pain occurred in association with emotional conflict or perceived psychosocial problems
- a marked increase in support and attention, either personal or medical is being provided by the family/caregivers
- References: Adapted from ICD-10: World Health Organisation. The ICD-10 Classification of Mental and Behavioural Disorders. Geneva: WHO, 1992

## IV. INVESTIGATIONS AND ASSESSMENT

Manoj's parents first consulted the General Physician who referred them to a Psychiatrist for help. Then they were referred to a psychologist for an educational and psychometric evaluation followed by psychotherapy. Psychological test findings revealed Manoj's intellectual functioning was on the average level (I.Q= 108) along with features of attention difficulties. Findings also revealed that his academic performance was affected mostly by his level of anxiety. During the psychotherapy sessions, Manoj was given the Hamilton Anxiety Rating Scale (HAM -A) and a visual analogue scale to rate his level of anxiety and his level of distress due to his headache.

## V. THERAPEUTIC PROGRAM

The total number of session conducted were 12 with one hour duration of the sessions, once a week initially for 8 sessions. Then gradually the frequency of the sessions was reduced with once in 3 weeks to once in 4 weeks. Within the treatment session, training in applied relaxation was combined with other cognitive and behavioural techniques (Hawton, Salkovskis, Kirk, and Clark, 2001).

**Figure 1: Figure showing the Psychopathology Formulation:**

## VI. PSYCHOPATHOLOGY FORMULATION

Based on the case history, behavioural observation and self-reports of Manoj, the psychopathology formulation was done which is illustrated as follows—

<p><b><u>PREDISPOSING FACTORS</u></b></p> <ul style="list-style-type: none"> <li>• <b>Personal</b>— Physiological vulnerability and physiological reactivity</li> <li>• <b>Contextual</b>— Family elicits care in case of sick-role behaviour</li> <li>• <b>Psychological factors</b>—</li> <li>• Suggestibility (friends bullying him “you are a mental” )</li> <li>• Temperamental-ly was shy, sensitive to criticism, difficulty in interacting with others especially children of his age</li> <li>• Low self-esteem</li> <li>• External locus of control</li> </ul>	<p><b><u>MAINTAINING FACTORS</u></b></p> <ul style="list-style-type: none"> <li>• <b>Personal</b>—</li> <li>• Sick-role behaviour</li> <li>• External health locus of control</li> <li>• Cognitive distortions (catastrophizing, selective abstraction, overgeneralization)</li> <li>• Dysfunctional coping strategies (avoidance, escape)</li> <li>• <b>Contextual maintaining factors</b>—</li> </ul> <p><b>i) Treatment system factors</b></p> <ul style="list-style-type: none"> <li>• Family denies/ faces difficulty to accept the role of psychological factors in causation of the headache</li> <li>• Family initially ambivalent about resolving the problems</li> <li>• Family never coped with similar problems before</li> </ul>	<p><b>ii) Family systems factors (Maintaining Factors Contd)</b></p> <ul style="list-style-type: none"> <li>• Unintentionally reinforcing the headache/sick role behaviour</li> <li>• Unintentional failure to reinforce non-symptomatic behaviour and age-appropriate independent behaviour or adherence</li> <li>• Inconsistency in management of somatic symptoms or non-adherence</li> <li>• High proximity and overprotective interaction in management of somatic complaints or non-adherence</li> <li>• Extreme reactivity to symptoms</li> </ul> <p><b>iii) Parental Factors</b>                  Low parental self-esteem, Low parental self-efficacy ,Cognitive distortions, Anxiety features in parents</p> <ul style="list-style-type: none"> <li>• Perceived family stress—children’s school/academic performance and achievement</li> </ul> <p><b>iv) Social network factors</b></p> <ul style="list-style-type: none"> <li>• Cousins doing well in examination, “Maintaining” at par with the society in terms of children's education, social status</li> </ul>	<p><b><u>PRECIPITATING FACTORS</u></b></p> <p>Poor academic performance (perceived as stress by parents and child) ,</p> <p>parent-teacher meeting followed by scolding and hitting by parents especially by father</p>
--	---	---	---



## HEADACHE

**Reference:** Carr,1999

### Initial phase

The initial sessions were first focussed on taking a detailed case history including both the parents' version of the presenting complaints as well as the child's, along with behavioural observation. Primarily, the sessions were directed mainly towards contracting with the parents for the treatment. A detailed psychoeducation including information on the clinical features, predisposing, precipitating, maintaining and protective factors were explained, along with the impact of the illness on cognition, behaviour, family adjustment, school adjustment and health over lifespan was provided to the parents. Manoj was given a simpler version of the formulation using simple schematic drawings and his favourite cartoon characters. However, it took some time for the parents to accept the "multifactorial" explanation of the presenting problems (Carr, 1999) which includes biological factors as well as the psychological factors in the causation of the symptomatology. The parents were worried since they were convinced with the fact that some "neurological" or "something serious" is wrong with their child (Carr,1999).

The focus and the goal of the therapy were explained to the parents and also nature and the basic structure of the sessions were discussed with them. A visual analogue scale from 0 to 10 (with 0 indicating minimum distress and 10 indicating maximum distress) was explained to Manoj as well as his parents for indicating his level of distress caused by his headache.

A family based treatment approach (Carr,1999)was also followed with some sessions being conducted with parents only, then followed by sessions with Manoj only and then including both the parents and the Manoj in the sessions.

Manoj and his parents were trained in recording the antecedent, consequences, intensity, duration, frequency and other features surrounding the occurrence of the symptoms. Initially Manoj was asked to record the intensity of his pain three times a day for a week to start out with. A self-monitoring chart was used to monitor the fluctuations in symptomatology and adherence to treatment regimes. Some pain-management skills were taught to Manoj to allow him to alter the physiological arousal level. Progressive muscle relaxation was taught to Manoj along with deep breathing exercises (Carr,1999).

Manoj's mother was coached in relaxation instruction, the process was first modelled by going through the exercises with Manoj, while his mother observed . A slow calming tone of voice and repetition of instructions was used to help him achieve a relaxed state. Before and after the exercises a 10 point scale was used to check out how relaxed he felt, where '1' reflected complete relaxation and '10' reflected extreme anxiety/tension. As reported by most children, Manoj also reported tension reduction on the first trial (Hawton, Salkovskis, Kirk, and Clark, 2001; Carr,1999). However, he was praised and it was interpreted to Manoj and his parents that Manoj has an aptitude for developing and refining the relaxation skills. Manoj's mother was told to instruct Manoj in completing the exercises daily at home and to praise him for completing the exercises. Manoj was

instructed to rate his distress due to headache before and after the relaxation exercises.

However, after one week of practice, Manoj reported increase in his headache and anxiety. This was also observed from the ratings he gave on the 10 point scale. This might be explained in a way that Manoj was being made aware of the bodily tension through the exercises, that is normally ignored otherwise. Alternatively, it might have occurred because of focussing his attention on the somatic processes during the exercises might have induced anxiety. This can also be termed as a "paradoxical reaction"(Heide and Borkovec,1984) . Pain diary was also used in a simplified version.

### Middle phase

After few weeks, Manoj's ratings on Visual analogue scale and parental reporting indicated marked improvement in his condition. According to the parents, Manoj now complained less about his headache and was studying on his own. He also completed his homework on time. Manoj was now explained that his overall adjustment to his somatic complaints was largely influenced by the amount of attention he was focussing on the symptoms, the way he was evaluating them and their consequences of such "sick-role" patterns. Some distraction techniques were listed for Manoj like listening to music, playing his favourite game etc in order help him distract himself from ruminating about his headache and the stressful events as perceived by him, in school (Hawton, Salkovskis, Kirk, and Clark, 2001).

He was now taught how to challenge the 'catastrophic'/ 'bad' thoughts by asking them what other possible interpretations of the situation could be. A self-instructional technique was also taught to Manoj in a simpler way followed by rewarding himself for the successful challenging and acting accordingly. Initially it was difficult for Manoj to follow the self- instructional technique and challenge the catastrophic thoughts. He was again explained in the form of diagrams including his favourite cartoon characters. He was explained in such a way that as if he would inculcate in himself, the 'stronger' traits of his favourite cartoon character. He was then explained how to break out of a "sick-role" and plan some alternative ways to deal with the 'stressful' situations. A diary for self-monitoring was also given to him in order to track his own progress.

Parents were taught how to use the reward system to reinforce Manoj's "well behaviour". Manoj also participated in preparing the reward chart with frequently occurring illness behaviour along with "well behaviour" to be reinforced more often. Parents were advised again not to reinforce reassurance behaviour of Manoj and were asked to encourage him in following the symptom-management techniques.

### Terminal phase

Manoj reported that he no longer felt scared of the classmate who used to bully him by asking him 'difficult' and 'out of

syllabus' questions, as Manoj was able to identify that his classmate used to ask 'irrelevant' questions just to 'scare' him.

In the terminal phase, the parents were briefed about the relapse-prevention. They were explained how the recurrence of illness is common and the adjustment problems associated with it were inevitable. They were told to follow the above techniques to manage such relapses even if other similar somatic complaints occur.

After summer vacation when his school reopened, Manoj complained of occasional stomach pain and knee pain for few days. His parents again became worried about the consequences. They took him to a paediatrician and gave him medicines. However, Manoj's mother reported, Manoj, never complained of any stomach ache or knee pain while walking, running or playing with his friends. It was mainly when he returns home from play after which he has to sit for studies. They were explained again

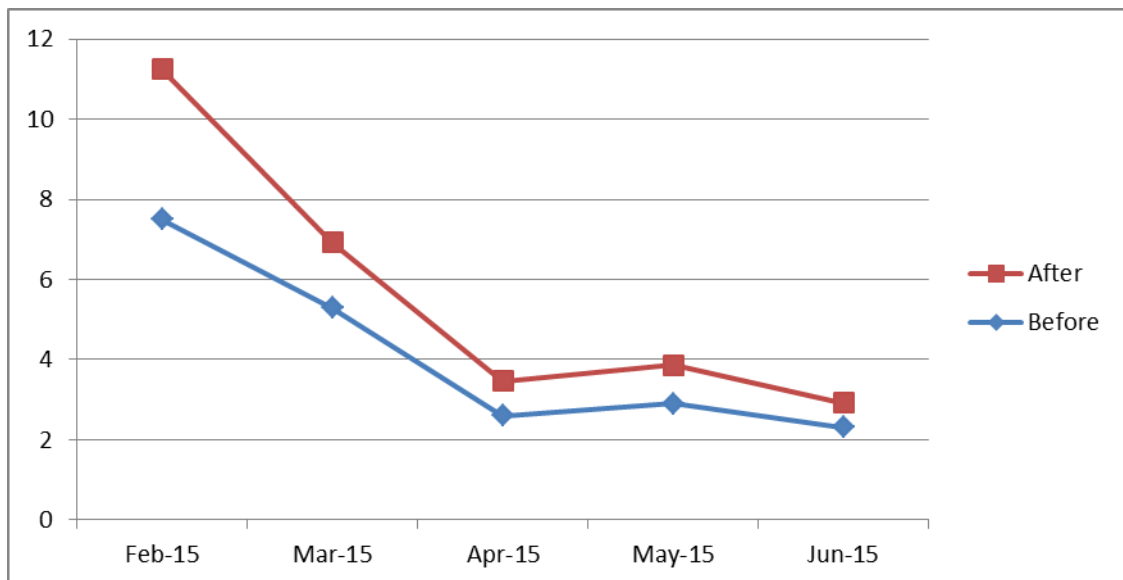
the development of the symptomatology and was asked to follow the above techniques.

Manoj however, reported that he was getting 'bored' of practicing the progressive muscle relaxation technique and insisted on changing the method. He was taught relaxation with visualization. He reported that he liked the 'new' method and reported that he would practice that regularly.

It was reported by the parents that Manoj has improved in his studies as his grades also improved. His teachers also praised him in the previous parent-teacher meeting. He also does his homework on his own and even pacifies his mother if she feels 'worried' about his academic performance. Manoj also participated in the football tournament in school on his own initiative. However, Manoj's father still felt worried about the stomach pain and knee pain. He was again explained the antecedents and consequences of such somatic complaints.

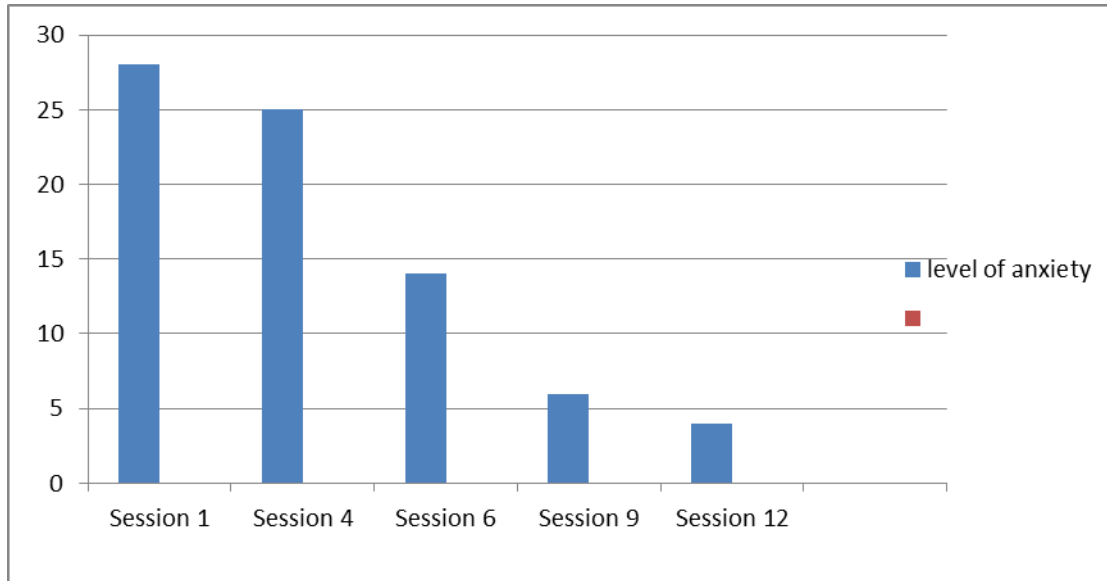
## OUTCOME:

**Graph 1: Graphical representation of the Mean Scores of ratings given by Manoj on a Visual Analogue Scale before and after practicing the progressive muscle relaxation:**





**Graph II: Graphical representation of improvement through sessions as assessed by HAM –A**



## VII. THERAPIST'S REFLECTION

A variety of personal and contextual factors played a key role in reduction of the symptomatology in case of Manoj. To reflect on them, a few that can be stressed might be termed as 'protective factors' (Carr, 1999). These factors were not only effective in making the treatment programme effective, but also served as a foundation for the therapeutic change in Manoj.

Though the family, especially the parents were initially not ready to comprehend and accept the fact that, psychological factors could be responsible in causation of Manoj's headache, they eventually accepted the fact that there is "some problem" beyond the physical or organic cause, as in spite of consumption of medicines, mainly painkillers, Manoj persistently complained about headache. Gradually the parents accepted the formulation and the treatment plan and were committed to resolve the problem. Moreover, a secure parent-child relationship also might have had contributed towards the betterment of the symptomatology. Previous studies also reflect on the relationship between secure attachments in childhood and positive social-emotional competence, cognitive functioning, physical health and mental health. However, it becomes difficult at times to control certain variables like changes in life circumstances, stress etc that might affect the attachment classification throughout the lifespan causing a hindrance to the well-being of the child (Ranson, and Urichuk, 2008). Authoritative parenting was also another reason that could be cited here for the progression of the treatment. Manoj's parents were very supportive in nature. When they realised that Manoj's problems might be related somewhat to the way they were 'managing' their child's behaviour, significant improvements were observed in Manoj's behaviour at home. This realization might have urged them to modify their way of handling their child's behaviour. (Chung and Lai-kuen, 1985).

It was also noted that, after the psychopathology formulation was explained to his parents, they also understood the importance of clear and direct communication among the members of the

family. Moreover, the entire family including the younger sister was very much involved in the therapy sessions. Often it was reported by the parents that the younger sister would help Manoj in school (both children were studying in the same school) to deal with "stress" and also asked him to practice deep breathing whenever he felt 'tensed'. The gradual lowering of family stress, good parental adjustment, accurate expectations about Manoj's academic performance depicted the amount of acceptance and flexibility the parents had in adapting to the changes being made in home environment. This also indicates that the role of a good social support from the family can speed up the process of betterment.

The parents especially the mother acted as 'co-therapists'. Previous studies also revealed that relaxation when taught to children by their parents under a psychologist's guidance it has the added benefit of disrupting the anxiety-maintaining parent-child interactions. The training given to parents can often act as 'change agents' for their children (Berkowitz and Graziano, 1972; Johnson and Katz, 1973; O'Dell, 1974; Cone and Sloop, 1974; Patterson Chamberlain and Reid, 1982).

Involving the parents in the relaxation training sessions had the risk of interference with the Manoj's ability to cope as the parents were very anxious regarding their child's headache (Dahlquist, Powers, Cox and Fernbach, 1994) However, Manoj's mother often used their family's native language in assisting him, which also might have had facilitated the progress of the treatment sessions. Moreover, the importance of 'family-centered' treatment could be highlighted here. The mother and the younger sister acted as co-therapists, which supports the notion that using the existing 'family personal resources' is important in psychological interventions for children (Barrera, 1999).

Previous studies also showed success in training parents in management of both internalizing and externalizing behaviour problems in childhood (Wahler, 1969; Forehand, King, Peed and Yoder, 1977; Walter and Gilmore, 1973; Patterson et al., 1982;

Lovaas, 1978; Hemsley, Howlin, Berger, Herson, Holbroak, Rutter and Yule, 1978; Moreland et al., 1982).

Corroborating with the previous findings, this study also depicted that the overall systematic-involvement of the parents leads to improvement of condition in case of chronic tension-type headache in children. The parents were also trained how to prompt and reinforce Manoj's self-help behaviours (Beames, Sanders and Bor, 1992). The expectation that the parents developed, that their child would achieve a higher functioning was associated with greater improvement and involvement in guiding and participation of the parents in the treatment process, leading to further improvement (Chung and Lai-kuen, 1985).

However, as mentioned earlier, the maintaining factors also has a remarkable role in somatization. As in case of Manoj, his father still had the difficulty in ignoring the symptoms. However, his mother was able to understand the pathology and reported that at times when she ignored he would not complain of stomach ache or knee pain. However, his father would get worried and took him to a doctor and gave him medicines. Manoj's father also reported that though he tried his best to ignore but he gets 'tensed' and fear that 'what if something happens...' Here it can be noted that even though Manoj has started learning to cope with 'stressful' situations by not taking the help of a 'sick-role' behaviour, the maintaining factors might be causing a hindrance for the complete remediation of somatization. The inadvertent reinforcement or the secondary gains for the somatization symptoms, non-adherence to the treatment regimes and behaviour, especially by the father could be said to be highly associated with further development of similar somatic complaints. It can also be said that failure to reinforce selectively, behaviours associated with non-symptomatic role, adherence to treatment regimes and age-appropriate autonomy might also be the cause (Carr, 1999).

The further goal of the therapy lies in cognitive restructuring of the family especially in case of the father along with reassuring him the long-term effects/ benefits of relaxation in reducing headaches (Engel, Rapoff and Pressman, 2005).

The present case study also highlights that training parents not only has its therapeutic value, but also has important implications for future use in a 'systematic prevention-oriented approach to mental health' (Chung and Lai-kuen, 1985).

## VIII. CONCLUSION

Validating with the previous literature, the present case study also showed that psychological intervention especially applied relaxation combined with cognitive and behavioural strategies is a favourable approach for management of chronic pain in children (Fisher, Heatcote, Palermo, Williams, Lau and Eccleston, 2014). The study also redirects the role of maintaining factors in persistence of somatic complaints.

## ACKNOWLEDGEMENTS

I Thank Dr. Yesheswini Kamaraju, Preethi Balan, The Reach Clinic and Ananya Sinha for their support and valuable comments that greatly improved the manuscript.

## REFERENCES

- [1] Abu-Arafeh, I. (2001). Chronic tension-type headache in children and adolescents. *Cephalalgia*, 21, 8, pp. 830-836.
- [2] Abu-Arafeh, I., Razak, S., Sivaraman, B. and Graham, C. (2010). Prevalence of headache and migraine in children and adolescents: a systematic review of population-based studies. *Developmental Medicine and Child Neurology*, 52, 12, pp. 1088-1097.
- [3] Alexander, F. (1990). *Psychosomatic Medicine: Its Principles and Applications*. New York: Norton.
- [4] Arruda, M.A., Guidetti, V., Galli, F., Albuquerque, R.C. and Bigal, M.E. (2010). Primary Headaches in Childhood: A population-based study. *Cephalalgia*, 30, 9, pp. 1056-1064.
- [5] Ayatollahi, S.M.T. and Khosravi, A. (2006). Prevalence of Migraine and Tension-Type Headache in primary-school children in Shiraz. *Eastern Mediterranean Health Journal*, 12, 6, pp. 809-817.
- [6] Barrera, M. (1999). Brief Clinical Report: Procedural Pain and Anxiety Management With Mother and Sibling as Co-therapists. *Journal of Paediatric Psychology*, 25, 2, pp. 117-121.
- [7] Beames, L., Sanders, M. R. and Bor, W. (1992). The Role of Parent Training in the Cognitive Behavioral Treatment of Children's Headaches. *Behavioural Psychotherapy*, 20, (2), pp. 167-180.
- [8] Berkowitz, B.P. and Graziano, A.M. (1972). Training parents as behaviour therapists: A review. *Behaviour Research and Therapy*, 10, 4, pp. 297-317.
- [9] Bibace, R. and Walsh, M. (1979). Developmental stages in children's conception of illness. In G. Stone, F. Cohen and N. Adler (eds), *Health Psychology: A Handbook*, San Francisco, Jossey Bass.
- [10] Briere, D., Reeve, R., Champion, G. and Addicoat, L. (1990). The faces pain scale for the self-assessment of the severity of pain experienced by children; Development, initial validation and preliminary investigation for ratio scale properties. *Pain*, 41, 139-150.
- [11] Campbell, T. and Patterson, J. (1995). The effectiveness of family interventions in the treatment of physical illness. *Journal of Marital and Family Therapy*, 21 545-583.
- [12] Campo, J.V. and Fritz, G. (2001). A management model for pediatric somatization. *Psychosomatics*, 42, 467-476.
- [13] Campo, J.V., Jansen-McWilliams, L., Comer, D.M., Kelleher, K.J. (1999). Somatization in pediatric primary care: Association with psychopathology, functional impairment, and use of services. *Journal of the American Academy of Child and Adolescent Psychiatry*, 1999; 38:1093-1101.
- [14] Campo, J.V. and Fritsch, S.L. (1994). Somatization in children and adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, 33, 1223-1235.
- [15] Carr, A. (1999). *The Handbook of Child and Adolescent Psychology: A contextual Approach*. Brunner-Routledge. New York.
- [16] Chakravarty, A. (2005). Chronic Daily Headache in Children and Adolescents: A Clinic Based Study from India. *Clinical Neurology*, 25, 10, pp. 795-800.
- [17] Chung, N. and Lai-Kuen, H. (1985). Training Chinese parents as agents of behavioural change for their children: an exploration evaluation study. The HKU Scholars Hub, University of Hong Kong, Postgraduate Thesis.
- [18] Cone, J.D. and Sloop, E.W. (1974). Parents as agents of change. In A. Jacobs and W. Spradlin (Eds.), *The Group as Agent of Change*. New York: Behavioural Publications.
- [19] Dahlquist, L. M., Powers, T. G., Cox, C. N., & Fernbach, D. J. (1994). Parenting and child distress during cancer procedures: *Children's Health Care*, 23, 149-166.
- [20] Drotar, D. (1992). Integrating theory and practice in psychological intervention with families of children with chronic illness. In T. Akamatsu, M. Parris Stephens, S. Hobfoll, and J. Crowther (eds), *Family Health Psychology* (pp. 175-192). Washington, DC: Hemisphere.
- [21] Eminson, M., Benjamin, S., Shortall, A. and Woods, T. (1996). Physical symptoms and illness attitudes in adolescents: An epidemiological study. *Journal of Child Psychology and Psychiatry*, 37, 519-528.
- [22] Engel, J.M., Rapoff, M.A. and Pressman, A.R. (2005). Long-term Follow-up of Relaxation Training for Pediatric Headache Disorders. *The Journal of Head and Face Pain*, 32, (3).
- [23] Fisher, E., Heathcote, I., Palermo, T.M., Williams, A.C.C., Lau, J. and Eccleston, C. (2014). Systematic Review and Meta-Analysis of

- Psychological Therapies for Children With Chronic Pain. *The Journal of Paediatric Psychology*, 39,8.
- [24] Fordyce, W. (1976). *Behavioural methods for Chronic Pain and Illness*. St Louis: Mosby.
- [25] Forehand, R., King, H.E., Peed, S., and Yoder, P. (1977). Noncompliant children: Effects of parent training on behaviour and attitude change. *Behaviour Modification*, 1, 93-108.
- [26] Fritz, G.K., Fritsch, S. and Hagino, O. (1997). Somatoform disorders in children and adolescents: A review of the past 10 years. *Journal of the American Academy of Child and Adolescent Psychiatry*, 36,1329-1338.
- [27] Garralda, M.E. (1992). A selective review of child psychiatric syndromes with a somatic presentation. *British Journal of Psychiatry*, 161, 759-773.
- [28] Garralda, M. (1996). Somatization in children. *Journal of Child Psychology and Psychiatry*, 37, 13-34.
- [29] Gross, A. and Drabman, R. (1990). *Handbook of Clinical Behavioural Paediatrics*. New York:Plenum.
- [30] Gupta, R., Bhatia, M.S., Dahiya, D., Sharma, S., Sapra, R., Semalti, K. and Dua, P.S. (2009). Recurrent Headach in Indian Adolescents. *The Indian Journal of Paediatrics*, 76, 7, pp. 733-737.
- [31] Hawton, K., Salkovskis, P.M., Kirk, J. and Clark, D.M.(2001). *Cognitive Behaviour Therapy for Psychiatric Problems: A practical Guide*. Oxford University Press.
- [32] Heide, F. and Borkovec, T.D. (1984). Relaxation-induced anxiety:mechanisms and theoretical implications. *Behaviour Research and Therapy*, 22, 1-12.
- [33] Hemsley, R., Howlin, P., Berger, M., Herson, L., Holbrook, D., Rutter, M. and Yule, W. (1970). Treating autistic children in a family context. In M.Rutter and E. Schopler (Eds.), *Autism: A reappraisal of concepts and treatment*. New York: Plenum Press.
- [34] Hester, N., Foster, R. and Kristensen, K. (1990).Measurement of pain in children: Generalizability and validity of the pain ladder and the poker chip tool. In D. Tyler and E. Krane (eds), *Paediatric Pain: Advances in Pain Research and Therapy* (vol.15), pp. 79-84, New York:Raven.
- [35] Holden, E.W., Deichman, M.M. and Levy, J.D. (1999). Empirically supported Treatments in Paediatric Psychology: Recurrent Paediatric Headache. *Journal of Paediatric Psychology*, 24,2, pp. 99-109.
- [36] Johnson, C.A. and Katz, R.C. (1973). Using parents as change-agents for their children: A review. *Journal of Child Psychology and Psychiatry*, 14,3, pp. 181-200.
- [37] Larsson, B. and Carlsson, J. (1995). A School-Based administered Relaxation training for children with chronic tension-type headache. *Journal of Paediatric Psychology*, 21, 5, 603-614.
- [38] Lask, B. and Fosson, A. (1989). *Childhood Illness: The Psychosomatic Approach*, Chichester:Wiley.
- [39] Lehmkuhl,G., Doopner, M., Plick, J., Berner, W., Fegert, J.M., Huss, M., Lenz, K., Schmeck, K., Lehmkuhl, U. and Poustka, F. (1998). Incidence of psychiatric symptoms and somatic complaints in 4- to 10-year-old children in Germany as judged by parents—a comparison of norm-oriented and criteria-oriented models. 26, 2, pp. 83-96.
- [40] Lovaas, O.I. (1978). Parents as Therapists. In M. Rutter and E.Schopler (Eds.), *Autism:A reappraisal of concepts and treatment*. New York:Plenum Press.
- [41] McGrath, P., McGrath, P.J., Cunningham, S., Lascelles, M. and Humphries, P. (1990). *Help Yourself: A Treatment for Migraine Headaches*. Ottawa:University of Ottawa Press.
- [42] McGrath, P. (1995). Aspects of pain in children and adolescents. *Journal of Child Psychology and psychiatry*, 36, 717-731.
- [43] McLeod, S.A. (2012). *Piaget: Cognitive Theory*. Simply Psychology.
- [44] Moreland, L.R., Schewebel, A.I., Beck, S. and Wells, R. (1982). A review of the Behaviour Therapy Parent Training Literature-1975-1981.*Behaviour Modification*, 6,2, pp.250-276.
- [45] O'Dell, S. (1974). Training parents in behaviour modification:A review. *Psychological Bulletin*, 8, pp. 418-433.
- [46] Ost, L.G. (1987). Applied Relaxation: Description of a coping technique and review of controlled studies. *Behaviour Research and Therapy*, 25,397-410.
- [47] Patterson, G.R. Chamberlain, P. and Reid, J.B. (1982). A comparative evaluation of a parent-training program. *Behaviour Therapy*, 13,5, pp. 638-650.
- [48] Ranson, K.E. and Urichuk, L.J. (2008). The effect of parent-child attachment relationships on child biopsychosocial outcomes: a review. *Early Child Development and Care*, 178,2, pp. 129-152.
- [49] Sanders, M., Shepard, R., Cleghorn, G. and Woolford, H. (1994). The treatment of recurrent abdominal pain in children: A controlled comparison of cognitive behavioural family intervention and standard paediatric care. *Journal of Consulting and Clinical Psychology*, 62, 306-314.
- [50] Sarafino, E. (1994). *Health Psychology:Biopsychosocial Interventions* (second edition). New York:Wiley.
- [51] Selye, H. (1976). *Stress in Health and Disease*. Reading, MA:Butterworths.
- [52] Shapiro, E.G. and Rosenfeld, A.A. (1987). *The somatizing child: Diagnosis and treatment of conversion and somatization disorders*. New York, NY: Springer.
- [53] Silber, T.J. and Pao, M. (2003). Somatization disorders in children and adolescents. *Pediatrics in Review*, 24,255-264.
- [54] Sharpe, M. and Mayou, R. (2004). Somatoform disorders: A help or hindrance to good patient care? *British Journal of Psychiatry*,184, 465-467.
- [55] Turk, D., Meichenbaum, D. and Genest, M. (1983). *Pain and Behavioural Medicine: A Cognitive Behavioural Perspective*. New York:Guilford.
- [56] Varni, J., Katz, E., Colegrove, R. and Dolgin,M. (1996).Family functioning predictors of adjustment in children with newly diagnosed cancer: A prospective analysis. *Journal of Child Psychology and Psychiatry*, 37,321-328.
- [57] Wahler, R. G.(1969). Oppositional Children: A quest for parental reinforcement control. *Journal of Applied Behaviour Analysis*, 2, 3, pp. 159-170.
- [58] Walker, L.S., Garber, J. and Greene, J.W. (1991). Somatization symptoms in paediatric abdominal pain patients: Relation to chronicity of abdominal pain and parent somatization. *Journal of Abnormal Child Psychology*,19, 379-392.
- [59] Wallander, J and Varni, J. (1992). Adjustment in children with chronic physical disorders: Programmatic research on a disability-stress-coping model. In A. LaGreca, L.Siegel, J.Wallander and C. Walker (eds), *Stress and Coping in Child Health* (pp. 279-298). New York:Guilford.
- [60] Wallander, J and Varni, J. (1998). Effects of Paediatric chronic physical disorders on child and family adjustment. *Journal of child Psychology and Psychiatry*, 39 29-48.
- [61] Walter, H.I. and Gilmore, S.K. (1973). In T.H. Ollendick and J.A. Cerny (Eds.), *Parent Training Programes*. *Clinical Behaviour Therapy with Children*, Applied Clinical Psychology (1981, pp. 251-276).
- [62] W.H.O: World Health Organization. (1992). *The ICD-10 Classification of Mental and Behavioral Disorders*. Geneva: WHO.
- [63] Williamson, D. (1993). Advances in Paediatric headache research. In T. Ollendick and P.Prinz (eds), *Advances in Clinical Child psychology* (vol. 15, pp. 275-304). New York: Plenum.
- [64] Wood, B. (1994). One articulation of structural family therapy model:A biobehavioural family model of chronic illness in children. *Journal of Family Therapy*, 16, 53-72.
- [65] Wood, B. (1996). A Developmental Biophysiological approach to the treatment of cvhronic illness in children and adolescent. In R. Mikesell, D., Lustman and S. McDaniel (eds), *Integrating Family Therapy: Handbook of Family Psychology and Systems Theory* (pp. 437-458). Washington, DC: American Psychiatric Association.

#### AUTHORS

**First Author** – Angana Mukherjee, Clinical Psychologist, M.A.(Speciaization-Clinical Psychology), M.Phil in Clinical Psychology, (Department of Psychology, University of Calcutta,) RCI Reg No.A28069,The Reach Clinic, Koramangala, Bangalore, India., Email--anganamukherjee6@gmail.com

**Correspondence Author** – Angana Mukherjee, Email—anganamukherjee6@gmail.com, Ph- +91-9739087734.

