REVIEW OF LITERATURE

The impact of chronic illness is far reaching, extending beyond the individual to all those with whom the individual has contact. Chronic illness affects all facets of life including social and family relationships, economic well-being, activities of daily living, recreational and vocational activities. Although several factors influence the extent of impact, every chronic illness on disability requires some alterations and adjustment in daily life. According to Falvo (2005), the extent of impact is dependent on the following:

- The nature of the condition.
- Individual's pre illness/ disability personality.
- The meaning of the illness or disability to the individual.
- Individual's current life circumstances.
- The degree of family and social support.

Reactions to chronic illness can vary considerably. Some individuals with chronic illness place less importance on the condition and associated limitations than do the able bodied members of the society. Social Groups establish their own standards with regard to idealized physical and emotional traits, roles and responsibilities. Individuals with chronic illness or disability who do not fit the socially determined norm may find that, regardless of their strengths and abilities they continue to be regarded in the context of societal views rather than their own.

People vary in their tolerance to symptoms, their functional limitations, and their general ability to cope with chronic illness and disability. Consequently, one must consider the effect of the diagnosis, symptoms and treatment on all aspects of individual's lives, specifically on their capacity to function within their own environment.

Compared with prevalence rates of mental illness the prevalence of chronic disease is at least 3 times higher statistically in children which is daunting (Adeghate et al., 2006).
One finding that strongly and clearly emerges from the review of literature is that chronically ill adolescents are at a higher risk for developing psychopathology as compared to their healthy counterparts. At the same time not all chronically ill adolescents end up with psychopathology. The present study makes an endeavor to understand which are the moderating factors which tend to make a chronically ill adolescent resilient to the adversity called chronic illness.

To enhance this understanding and to add to the inconclusive literature especially in the context of impact of chronic illness on adolescents per se present study was undertaken with the following objectives: to compare the high mental health and low mental health groups among the chronic disease groups on depression, perceived social support and perceived parental bonding dimensions, measures of stress, ways of coping, Eysenckian personality dimensions, self esteem and family environment dimensions; to explore the differences within the disorder groups viz. Gastrointestinal Disorders Respiratory Disorders, Skin Disorders, on the chosen variables. In addition gender differences in the chronically ill adolescents were also explored.

Review of literature mainly comprises of two parts:

I) Conceptual framework.

II) Review of studies related to the variables chosen for the three Chronic Disease Groups viz. Gastrointestinal Disorder Group; Respiratory Disorder Group and Skin Disorder Group.

I) CONCEPTUAL FRAMEWORK

MENTAL HEALTH

Mental Health is aptly defined as the full and harmonious functioning of the total personality, realizing one’s full potential in the world of work, with satisfaction and contentment to oneself and benefit to the society (Verma and Verma, 1989).
Verma and Verma (1989) put forth a dual factor theory of mental health. This dual factor theory postulated that there are different sets of factors that contribute to negative and positive mental health. Some factors when present only contribute to negative mental health but their absence does not lead to positive mental health. These negative factors could be manifested as mental disorders (like neurosis, psychosis, drug and alcohol dependence, personality disorders, psycho-physiological disorders etc.) or as mental symptoms like anxiety, depression, obsessions, compulsions, delusions, hallucinations, de-realization, de-personalization etc.) Or even as negative states like anger, hostility, dissatisfaction, jealousy, irritability, fear, prejudices, Inferiority feelings, depression.

When one talks about positive mental health in terms of children as adolescents, Cock (1970) proposed three components:

- A child's attitude to himself, his self concept is of prime importance. The mentally healthy child feels reasonably comfortable about himself and reasonably secure and adequate. He neither underestimates nor overestimates his ability. He accepts his shortcomings, has self-respect, self-confidence and self-reliance, and strives to realize his potential and talents.

- Mentally healthy child learns to have a reasonably effective relationship with his peers, teachers, his parents and other adults. He can feel a part of the group with out being completely dominated by it, he learns to do things for others.

- To become a mentally healthy adult a child must learn to face reality in reasonable fashion and cope with a fair degree of anxiety and stress. He must learn to think for himself, to make his own decisions and to do something about his problems as they arise. He must be able to balance his life so that he can handle his emotions, his instincts and his conscience without undue conflict; he needs to be able to set realistic goals.
According to Goldberg and Williams (1988), General Health Questionnaire allows for distinguishing, patients suffering from psychiatric problems from those in good mental health. Two aspects of the psychiatric aspects are measured: the inability to pursue normal functions of daily living and the appearance of the new symptoms that lead to a state of Psychological Stress (Werneke et al., 2004). According to Goldberg and Williams (1988), General Health Questionnaire allows for estimating the prevalence of Psychological distress in a given population and in general medicine. It also allows detecting cases of potential psychiatric problems that would otherwise escape detection by the physician.

DEPRESSION

According to Beck (1974), Depression has been defined as “a cognitive triad characterized by negative views of self, the outside world and future”.

The onset of clinical depression may occur for variety of reasons, not all of which one fully understands. A number of vicious circles that may act to maintain depression can be identified. This draws heavily upon cognitive models of depression such as that given by Beck et al (1979) and the learned helplessness model of depression (Seligman, 1975; Abramson et al., 1978) although they do differ from each other in some ways, the consensus is that experiences interpreted in particular negative ways can produce symptoms of depression, or intensify already existing symptoms. Symptoms of depression can also be produced by activation of the representations in memory of representation in memory of events or interpretation of events previously associated with depression. Depression is a response to current experiences perceived as highly aversive and uncontrollable (Teasdale, 1983).

Beck postulated that people have relatively stable styles of cognitions which he termed “Schemas”. They form the structural organization of depressive thinking and locate the nexus of cognitive vulnerability in childhood, experiences. A schema may be inactive for long periods of time but can be energized by specific environmental inputs (for e.g. stressful situations) (Beck.
et al., 1980). He emphasized this reciprocity of thought and circumstances and went on to argue that in depression there are "pre potent dysfunctional schemas" which are evoked by a wide range of inappropriate stimuli.

Epidemiological studies have reported prevalence of depression in teenagers ranging 0.4 and 8.3%. Furthermore lifetime prevalence of depression in adolescent teenagers varies between 15 to 20% which is comparable with the adults, suggesting that depression frequently has its onset in adolescence (Levisohn et al, 1983).

In contrast to early adulthood, teenage is a period during which levels of depression increase especially for females. Although males exhibit higher levels of depression than females during childhood, females display higher levels of depression during adolescence.

Clinicians formerly thought that, if children and early adolescents could become depressed, they would show very different symptoms than adults who became depressed (Kovac and Beck, 1977); specifically, children's depressions were said to be "masked" by somatic complaints and misconduct. Although the prevalence of some symptoms of depression seems to differ between childhood and adolescence (Compas et al., 1993), two decades of research on the symptoms shown by distressed children and adolescents over the age of 9 have shown that children and adolescent can and do experience the symptoms associated with adult depression (Kovac and Beck, 1977; Puig-Antich, 1986). That is, the adult criteria for depression can be reliably and meaningfully applied to diagnose depression in children and adolescents.

Peterson et al, (1993) suggested the following types of depressive disorder among adolescents.

- Depressed mood
- Depressed Syndrome
- Clinical Depression

In depressed mood, teenagers report having the ‘blues’ or report feeling sad and down. Such feelings are usually triggered by an external source for
SELF ESTEEM

Self Esteem is defined as “the evaluation which an individual makes and customarily maintains with regard to himself, expressed as an attitude of approval or disapproval (Rosenberg, 1965). Self Esteem has been studied as a state or as a trait, as primarily cognitive or affective dimension with an emphasis on the extent to which the individual likes himself or herself and as a series of domain specific evaluations e.g. academic self esteem and social self esteem (Rosenberg, 1965).

Self Esteem is the perception of the individual’s self worth. It is vital in restoring or maintaining both mental and physical health (Overbaugh and Sawin, 1992). Millstein et al. (1993) said that throughout adolescence, self esteem appears to be affected by young people’s judgments of their competence on certain valued domains. Domains identified as important include physical attractiveness, acceptance by peers, and to a lesser extent, academic competence, athletic ability and conduct.

STRESS

Stress refers to a state of the organism resulting from some interaction with the environment. Lazarus and Folkman (1984) defined stress as “relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well being”.

Lazarus (1966) postulated that an individual’s perception of stress was significantly more important than the event per se in determining the impact of the stressor. He referred to these perceptions as appraisal and divided them into primary and secondary.

Primary appraisal is concerned with the cognitive process of evaluation whether negative outcomes can occur in the encounter. Secondary appraisal follows primary appraisal and is the individual’s attempt to define what coping
options and resources are available for dealing with the environmental demands and also the constraints present.

The process of the primary and secondary appraisals are determined by:

1. The individual’s previous experience with such demands and situations,
2. The general beliefs about the self and the environment,
3. The breadth of the individual’s repertoire of coping, the mastery of specific coping skills, and the expectation that the skills will be effective (Dimsdale et al., 2000).

According to Beehr and Numan (1978), Stress has been defined as a “condition that disturbs the individual’s psychological and physical state such that it is forced to deviate from normal functioning”. There are primarily two types of stressors Life Event Stressors and Daily Hassles and Uplifits.

**LIFE EVENT STRESS**

Solanki and Ganguli (1987) stated that life stress refers to a state of imbalance with an organism that I) is elicited by an actual or perceived disparity between environmental demands and the organism’s capacity to cope with these demands, and ii) is manifested through variety of psychological, emotional and behavioral response.

A life event is “indicative of, or requires a significant change in, the ongoing life patterns of the individual “(Homes and Masuds, 1974). These events can occur in variety of domains (family, health, work) and may be age-graded (school, marriage, retirement), history-graded (war and depression), or non-normative (illness and divorce).

**DAILY HASSLES AND UPLIFTS**

Hassles are irritants – things that annoy or bother us, they can make one upset or angry where as uplifts are events that make one feel good, joyful, glad or satisfied (Kanner et al., 1981). Some hassles and uplifts occur on a
fairly regular basis and others are relatively rare. Some have only a slight effect, others have strong effect. Minor events or daily hassles and uplifts are those stressors which a person experiences in the process of his everyday life situations (Hahn, 1999). They are different from major life events and tend to have different negative behavioral outcomes. Daily hassles were defined as the ‘irritating, frustrating, distressing demands that to some degree characterize everyday transactions with the environment.’ (Kanner et al., 1981). Daily hassles are chronic irritants. Hassles are the minor negative events while uplifts are minor positive events (Stone et al., 1987). Hassles and Uplifts are related to the health of an individual.

Chronic stressors are aspects of the environment that are demanding on an ongoing and relatively unchanging basis (Eckenrode, 1984). Chronic stressors may be relatively high-intensity stressors, such as fear of losing one’s job, or they may be low-intensity stressors, such as constant minor disagreements with coworkers. The dimension that distinguishes chronic stressors from other types of stressors is the frequency with which they occur. Chronic stressors are the only type of stressor with a high frequency of occurrence.

Coping

Coping is a continuous cognitive and behavioral process of overcoming stress and stressful consequences of external forces (Mohan, 2003).

According to Folkman and Lazarus (1988), Coping has been defined as “cognitive or behavioral responses to eliminate psychological distress and stressful conditions.”

They have further classified the coping responses in two categories viz.: Problem focused coping and Emotion focused coping. Endler and Parker (1990) commented “If there is a consensus on the coping literature, it is important distinction between emotion focused and problem focused coping”. Although both types of coping represent efforts to manage demands that are appraised as taxing one’s own resources, emotion focused coping is directed
toward regulating affect surrounding a stressful experience, where as problem focused coping involves direct efforts to modify the problem causing the distress \cite{Lazarus1984}. Folkman and Lazarus \cite{Folkman1980} observed that in most situations, a combination of both these types of coping are used, rather than any one of them to the exclusion of the other.

Eight coping strategies identified by Folkman \textit{et al.} \cite{Folkman1987} are: Confrontive coping, seeking social support, planful problem solving, self control, distancing, positive reappraisal, accepting responsibility, escape avoidance.

\textbf{SOCIAL SUPPORT}

According to Cobb \cite{Cobb1976}, Social Support is defined as “Information leading the subject to believe that he is cared and loved, esteemed and valued and belongs to network of communication and mutual obligation”.

Social support can be formally defined as the interpersonal interaction and relationships that provide one with assistance or feelings of attachment to persons one perceives as caring.

Social Support has been conceptualized as the beneficial interpersonal as the beneficial interpersonal transactions that protect people from adverse effects of stressful occurrences. Being helped is often rewarding and leads to positive feelings towards the helper. There is extensive evidence that various kinds of support- instrumental, emotional and social provide benefits for health, mental health and happiness \cite{Lu1997}.

\textbf{PARENTAL BONDING}

Bowlby \cite{Bowlby1969} and Ainsworth \textit{et al.}, \cite{Ainsworth1975} emphasized the central role of the relationship between parent and child in normal development. Bowlby postulated that the attachment behavior that one observes from six months onward is made up of a number of instinctual responses which mature at different times, serve the function of binding the child to the mother, and contribute to the reciprocal dynamics of that binding. As such, the behavior includes clinging, crying, calling, greeting, and smiling. Infants use these
behaviors to signal that they discriminate between the mother or mother figure and everyone else, while the mother interprets the signals and provides appropriate responses. Many psychiatric disorders are attributed either to deviations that have occurred in the development of attachment behavior or more rarely to a general failure of its development (Bowlby, 1988).

Parker et al. (1972) suggested that the parental contribution to bonding may be influenced by two principal source variables. The first variable is care dimension and the second dimension is of psychological control over the child.

1. Parental care is defined in terms of affection, emotional warmth, empathy and closeness.
2. Parental overprotection has been defined in terms of control, over protection, intrusion, excessive contact, infantilization and prevention of independent behaviour.

Attachment refers to the biologically based, lifelong tendency of human beings under conditions of stress to seek some form of proximity (physical or emotional) with specific other persons who are perceived as protective or comforting, such that one’s emotional and physiological disequilibrium are restored (Bowlby, 1969, 1973).

FAMILY ENVIRONMENT

Family functioning is the way that family members fulfill necessary roles and perform practical tasks that facilitate the family’s life together and the way its members move ahead through time (Flobair and Zobara, 1995).

Moos (1984) defined family functioning as the measure of how family members relate to each other, pursue goals, display activities and accept family routines and procedures.

Family Environment and family members adaptation mutually influence each other. More specifically each adult family member’s personal characteristics, coping skills and wellbeing can affect the quality of family relationships and the family emphasis on system maintenance. That is why
when an adult in a family has a behavioral or emotional disorder the family environment is likely to be affected. Two other factors that influence the family conflict: Children’s personal characteristics, coping skills and well being and acute life crisis and on going stressors and resources from settings outside the family such as child’s serious physical illness, can also alter the family member’s coping skills and personal characteristics (Moos and Moos, 1994).

Family environment comprises primarily of 3 dimensions viz.

1. **The Relationship Dimension** which includes: Cohesion, Expressiveness and Conflict.


3. **The System Maintenance Dimension** which includes: Organization and Control.

**A) REVIEW OF STUDIES ON DEPRESSION AND MENTAL HEALTH IN CHRONIC ILLNESS GROUPS**

Functional gastrointestinal disorders (FGIDs) are best conceptualized using a biopsychosocial model (Drossman, 1996) as depicted in (fig.4). As summarized by Drossman et al. (1999), the biopsychosocial model may help to explain the reason patients have different symptoms such as both diarrhea and constipation, pain without dysmotility, or disturbed motility with pain. Additionally, histories of sexual, physical, and emotional abuse, unhelpful coping abilities, and other psychosocial distress and the varied impact of these factors on quality of life and clinical outcome are more easily explained by the biopsychosocial model. Moreover, other contributing factors such as environmental stress, emotions, and thoughts on gut function, which are affected through receptor activity and neurotransmitter release, profoundly affect daily function, symptom severity, and health outcome. Thus, the biopsychosocial model would address these issues and play an important role in the understanding and treatment of functional gastrointestinal disorders.
Review of Literature

Early Life

- Genetics
- Environment Psychosocial Factors
  - Life stress
  - Psychological state
  - Coping
  - Social support

Brain Gut
CNS ENS

Physiology
- Motility
- Sensation
- Inflammation
- Altered factorial

Flora

FGID
- Symptoms
- Behavior

Outcomes
- Medications
- MD Visits
- Daily function
- Quality of life

Fig 4. Biopsychosocial conceptualization of the pathogenesis and clinical expression of the functional Gastrointestinal disorders shows the relationships between psychosocial and physiological factors, functional Gastrointestinal symptoms and clinical outcomes. (Drossman, 1996)
Whether psychiatric disorders are a cause of, a consequence of, or co-occur. Psychological investigations of children with recurrent abdominal pain have suggested that at least two-thirds of them exhibit significant psychopathology (Apley and Naish, 1958; Stone and Barbero, 1970; Astrada et al., 1981). According to Apley (1975) and Walker et al. (1994), pediatric patients with recurrent abdominal pain, the most common recurrent pain complaint in childhood, exhibit high levels of somatic symptoms, functional impairment, and health service use. For some children, this condition and its sequelae continue into adolescence and adulthood (Walker et al., 1998).

Numerous studies have demonstrated that patients who are treated in tertiary care settings have a high prevalence (50%-100%) of psychiatric illness (MacDonald and Bouchier, 1980; Craig and Brown, 1984; Ford et al., 1987; Toner et al., 1990). Accounts of comorbid conditions with irritable bowel syndrome include (a) mood disorders (major depression and dysthymic disorder), (b) somatoform disorders (hypochondriasis and somatization disorders), and (c) anxiety disorders (panic and generalized anxiety disorders).

Several studies have shown that in comparison with healthy children, recurrent abdominal pain patients have higher levels of anxiety, depression, and somatization symptoms (Garber et al., 1988). It is not clear, however, whether recurrent abdominal pain patients can be differentiated from other patient groups on the basis of the degree and type of their emotional and somatic symptoms. Anxiety, depression, and somatization symptoms have been found to be as high in patients with organic illnesses as in recurrent abdominal pain patient (Walker and Greene, 1989), raising the possibility that these symptoms in recurrent abdominal pain patients reflect the distress typically seen among patients presenting for pediatric health services (Costello et al., 1988) rather than underlying emotional disorder unique to patients with recurrent abdominal pain. Furthermore, it is not clear whether the nature of emotional and somatic symptoms differs for recurrent abdominal pain and psychiatric patients. The rate of emotional symptoms, particularly anxiety,
may be as high in recurrent abdominal pain patients as in psychiatric patients (Garber et al., 1990; Hodges et al., 1985).

Walker et al. (1998) found that children with recurrent abdominal pain have higher levels of anxiety and depression than healthy children, and levels of anxiety and depression are often related to the duration of symptoms in these children. According to Drossman et al. (1999), patients with irritable bowel syndrome, like many other medical patient groups, experience levels of depression and anxiety intermediate between groups of psychiatric patients and healthy controls.

According to Walker et al. (2001), depressed children with recurrent abdominal pain report numerous bodily symptoms in response to daily stressors, suggesting that stress reactivity is important in these children. Drossman et al. (2002) reported an increased prevalence (40%-60%) of psychiatric disorders in clinic patients with some functional gastrointestinal disorders (notably irritable bowel syndrome) compared with healthy controls (<20%) and patients with similar abdominal symptoms that can be explained by underlying organic gastrointestinal disease (<25%). The most common disorders are anxiety, depressive, panic, posttraumatic stress, and somatization disorders. These disorders frequently precede or occur simultaneously with the functional gastrointestinal disorders, indicating that the psychiatric disorder cannot always be regarded as response to the functional gastrointestinal disorders.

Graham et al. (1967) investigated 76 children with asthma, and they found higher rates of psychiatric disorders than in the general population. The predictive value of this study may be limited because of historical changes in assessment methods and diagnostic categories used, but it is now the only available population-based investigation. Epidemiologic data also shows that asthma is associated with an increased risk of suicidal ideation and an elevated rate of suicide attempts among adults in the community (Levitan, 1983). These data further suggested that the use of medication treatments for
Review of Literature

Asthma is associated with an even higher prevalence and incidence of suicidal ideation and behavior.

According to Seligman et al. (1984), the well known relationship between depression and an attitude of helplessness may create conditions for a passive behavioral response to stress, which appears to be particularly associated with vagal activation (Inamori and Nishimura, 1995; Roozendaal et al., 1997). Asthma attacks are usually associated with emotional responses from the child and family, often characterized by fears and anxieties. These can interfere with effective symptom self-management (Schwam, 1987). Two studies found that children who died from asthma attacks had higher levels of psychosocial problems, including depressive symptoms and family dysfunction (Miller and Strunk, 1989), although these latter findings were not replicated in another study (Barboni et al., 1997). Children with severe chronic illness are at increased risk for psychological adjustment problems (Wallander et al., 1988; Maclean et al., 1992).

Eiser et al., (1992) compared children with diabetes, asthma, epilepsy, leukemia, and cardiac disease on mothers’ ratings on the Child and Adolescent Adjustment Profile. They found that the children with epilepsy were the least well adjusted based on Peer Relations scale scores, followed by children with asthma. Fewer peer problems were identified in children with diabetes, leukemia, and cardiac disease. Eiser et al. (1992) explained that the unpredictable episodes that characterize epilepsy and asthma may negatively affect peer relations because these episodes cause anxiety in peers. Yellowlees (1992) ascribed an “anxiogenic” property to asthma, attributable to biological and psychosocial characteristics of the disease.

Kashani et al. (1998) studied fifty-six asthmatics and 56 matched control children and their parents where in several psychiatric inventories were administered including the child (DICA) and parent (DICA-P) versions of the Diagnostic Interview for Children and Adolescents, the Child Behavior Checklist, the Hopelessness Scale, and the Piers-Harris Children’s Self-Concept Scale. They found that asthmatic children did not differ from control

65
children in self-concept. There was some evidence suggesting that asthmatic children were at greater risk to psychopathology. Interestingly, severity of asthma appeared to be largely unrelated to psychiatric problems.

Persons with asthma and comorbid psychiatric disorders have more impaired functioning in both emotional and physical arenas than persons with either disease alone, or with poorer control of asthma (Siddique et al., 2000 and Afari et al., 2001).

According to Gorman et al. (2001), biological theories posit that repetitive experiences with hypoxia and hypercapnia may also sensitize neural circuits that control fear responses, such as neurons in the amygdala and locus ceruleus, to overreact to either subsequent episodes of hypoxia and hypercapnia due to asthma or to fearful perceptions of conditioned stimuli such as the sensation of breathlessness. Physiologic studies of children with asthma vs, healthy controls have suggested that experimental stress modestly increases airway resistance in both cases and controls (Perna et al., 2002). However, children with asthma begin with higher intrinsic airway resistance, so increases in resistance result in a higher absolute level of compromise compared with healthy controls (McQuaid et al., 2000). The increased relativity to life stressors often seen in patients with anxiety disorders may be associated with more frequent perturbations in airway resistance with common stressors, which may in turn stimulate neural circuits associated with fear responses.

In a study by Hughes et al. (1983), 30% of 196 dermatological outpatients and 60% of 40 dermatological inpatients reported impaired mental health. About 20% of the total sample displayed psychological symptoms severe enough to be categorized as an adjustment disorder. Similarly, Wessley and Lewis (1989) reported that 30% of 173 dermatological outpatients showed clinically relevant psychiatric symptoms, indicating a high impact of the skin disease. In two recent studies, similar rates of psychiatric comorbidity of 33.4% and 25.2%, respectively, were observed in dermatological outpatient samples (Aktan et al., 1998; Picardi et al., 2000).
Some research has been done on establishing dermatology-psychiatry liaison clinics, in which dermatological problems complicated by psychopathology are identified and treated on site. Gould and Gragg (1983) examined the incidence of psychiatric disorder in a series of 60 consecutive patients admitted to a dermatology-psychiatry liaison clinic and found that the three most common psychiatric diagnoses were depression, anxiety, and obsessive-compulsive disorder. A study by Hatch et al. (1992) used structured psychiatric interviews at random, in consecutive sample of patients attending a dermatological clinic to show a relationship between certain dermatological conditions and anxiety. A particularly interesting finding was the high prevalence of obsessive-compulsive disorder in this population.

The Epidemiologic Catchment Area Program (Robins et al., 1984) demonstrated that anxiety disorders are the most common psychiatric condition and that the lifetime prevalence rate for obsessive-compulsive disorder may be as high as 1-3%. This study indicates, however, that many patients with anxiety disorders, and in particular obsessive-compulsive disorder, are presented to dermatologists. It is clear from the just-described studies that psychological disturbance is prevalent in dermatology patients but is rarely diagnosed, treated, or referred for psychological treatment. At the same time, it is clear from reviewing the literature that approaches that have looked at dermatological disorders from either a strictly psychological or a physiological perspective have proven insufficient.

The experience of having a skin disease is frequently accompanied by significant changes in a person's physical appearance. The consequences of this are two fold. Firstly, the visibility or prominence of the disease may attract attention in social situations, thus hindering the patient from keeping their condition a private or personal matter. Furthermore, since skin disease is sometimes associated with contagion or lack of hygiene (Kleinman, 1988), the sufferer may find that others react negatively towards them, or treat them differently because of their appearance. Secondly, the physical changes that may develop from skin disease can have a negative effect on body image.
Unlike disfigurement resulting from illness or trauma, cutaneous conditions can often be progressive making it necessary for the patient to psychologically adapt to changes in their physical appearance. The patient may begin to feel socially and physically handicapped and begin to avoid certain situations. In line with these views, recent research has suggested that people who suffer with dermatological conditions have been found to experience higher levels of distress than the general population (Ramussen, 1990; Root et al., 1994).

Daud et al. (1993) reported that both children and adults suffering from atopic dermatitis have a higher anxiety level than non-sufferers. The anxiety level is reduced with improvement in skin condition and has been shown to improve with psychological treatment. Ehlers et al. (1995) found significant reductions in psychological and dermatological symptoms. The experience of anxiety and the resources to manage it vary in individuals and may not be dependent on the severity of skin condition.

**B) REVIEW OF STUDIES ON PERSONALITY AND SELF ESTEEM IN CHRONIC ILLNESS GROUPS**

Medical professionals often face complex diagnostic decisions and may be influenced to recommend unnecessary medical procedures. Up to 60% of patient visits to primary care physicians have no medical basis (de Leon et al., 1987). In addition, despite the cost and risk of many diagnostic procedures, a surprisingly large proportion of referred patients show insignificant signs of disease. The results of one study showed that over 30% of patients referred for coronary angiography tested negative (Pryor et al., 1983). Physician referrals are largely based on patients' symptom descriptions that, in turn, may be heavily influenced by psychological factors (Cioffi, 1991; Pennebaker, 1982). If patients are inaccurate in or exaggerate descriptions of their state, physicians may respond with unnecessary recommendations.

Bolger and Schilling (1991) found that neuroticism, which is related to the negative affectivity trait, was associated with increased reactivity to daily stressors. They speculated that the impact of neuroticism on reactivity may be
explained by the tendency for individuals high in neuroticism to use less effective coping mechanisms when confronted with stress (Bolger and Zuckerman, 1995). Similarly, children with high trait of negative affectivity may interpret stressors as more threatening, may doubt their coping abilities, and may use passive coping strategies that are less likely to be effective and therefore result in physiological arousal and emotional distress.

According to Walker and Zeman (1992), in children with recurrent abdominal pain, arousal might be manifest in somatic symptoms if the salience of illness and the encouragement of illness behavior in their families cause them to focus on the somatic components of their distress. In this way, the relation between stressors and symptoms could be increased in children with recurrent abdominal pain who have high negative affectivity trait.

To date, investigators have not identified a personality profile unique to irritable bowel syndrome. According to Toner et al. (1998), patients with irritable bowel syndrome who go to specialty clinics commonly believe that their bowel symptoms are indicative of cancer or serious gut disease. As such, they pay particular attention to abdominal sensations, seeking out other information that is consistent with such beliefs (Toner et al., 1998). According to Chabbra et al. (1999), patients with irritable bowel syndrome report many nongastrointestinal complaints and resulting in 2 to 3 times as many visits to physicians for these disorders (Drossman et al., 1993).

According to Neuhaus (1958) asthmatics are more neurotic insecure and dependent. Analytically, it might be said that they have weak ego organizations with an inadequately assimilated super ego. Dunbar (1938) concluded from the psychoanalysis of three asthmatics that they had certain personality problems in common. These were an intensive reaction to separation from the mother, a demand for love which combined a fear of love and a revolt against it and in the case of the woman, a repudiation of the female role; they had homicidal trends associated with an impulse to self-injury. They tended to hold others responsible for their difficulties. The final interpretation was that these asthmatics were compulsive neurotics who
developed few phobias or rituals except in periods free from asthma. Analytically, it might be said that they had weak ego organization with an inadequately assimilated super ego.

According to Watson and Pennebaker (1989) and Pennebaker (2000), there is consistent evidence that demonstrates that in general population individuals with high negative affectivity trait (or neuroticism) report more physical symptoms that these patterns often persist even when individuals high and low in negative affectivity trait do not differ in objective health or even when controlling for objective indicators of disease. According to Watson and Pennebaker (1989), a number of explanations have been proposed for why higher levels of trait of negative affectivity are associated with greater symptom reporting. First, individuals with high negative affectivity trait may be hypersensitive to stimuli, pay greater attention to bodily sensations and perhaps have a lower threshold for detecting symptoms. Second, high negative affectivity trait could lead individuals to have biases in how they interpret sensations for instance causing symptoms to be interpreted negatively (Watson and Pennebaker, 1989). Third, individuals with high negative affectivity trait may preferentially recall symptom experiences (Larsen, 1992). Alternatively, negative affect may be a consequence of disease symptoms, or negative affect may lead to disease with subsequent symptomatology (Cameron et al., 2002). Thus uncertainty remains about whether individuals high in negative affect perceive, report, and/or recall more symptoms or whether these individuals actually experience more symptoms biologically (Rabin et al., 2001). Fritz et al. (1996) found no relationship between anxiety and the ability to predict the results of one’s lung function test in a sample of children with asthma.

According to Roy-Byrne et al. (2001), anxiety and depressive illness as well as perceived asthma severity (symptom burden, functional impairment) may undermine self-efficacy, decrease internal locus of control, and decrease self-esteem. Both anxiety and asthma symptoms frequently lead to fearful cognitions (i.e., catastrophizing) and a sense of being out of control and
needing help and support. Sharma (2002) found that asthmatic adolescents were higher on psychoticism and neuroticism in comparison to the healthy adolescents. According to Katon et al. (2003), anxiety and depressive disorders may also directly affect perception of symptoms and be associated with increased medical costs and adverse asthma outcomes that impair functioning may precipitate anxiety and depressive disorders.

According to Walker et al. (2006), the above mentioned studies could have profound implications for children with episodic and unpredictable illnesses like eczema and asthma. Children and indeed parents often have no knowledge of when their condition would exacerbate or the different factors that can bring about this change in disease status. As such, it might be suggested that children with episodic illnesses like eczema and asthma would be a high-risk population as regards the external locus of control and anxiety associated with unpredictable illnesses. This may have implications for the status of the diseases, which are known to be stress-related and could also have implications for a multitude of psychosocial factors related to the disease, such as peer relations, parental relations and functional and treatment issues.

Previous studies have shown that acne can cruelly impair self-image (Shuster et al., 1978) psychological well-being (Van der Meeren et al., 1985) and the ability to form relationships (Jowett and Ryan, 1985). Despite this, skin diseases such as acne are still commonly thought of as unimportant, even trivial (Mallon et al., 1999). Mallon et al. (1999) reported that acne causes emotional social and psychological disability severe enough to be detected using instruments not designed with skin disease in mind. Furthermore, although acne patients are denied that they were ill, they reported problems that were at par with those reported by patients with what would normally be considered much more ‘serious’ general medical conditions.

According to Kleck and Strenta (1980) and Cash and Pruzinsky (1990), some researchers have suggested that the effects of stigmatization may alter a persons cognitive processing leading them to perceive even benign responses as hostile. The emotional impact felt by people with visible
or disfiguring skin diseases, in attempting to satisfy cultural demands of attractiveness has been poignantly described by MacGregor (1951) as social death, a withdrawal from social roles. This ‘social death’ can affect the activities/behaviours that a person engages in, diminish the amount of social support that the patient receives, and in turn affect the coping resources that one has to help them deal with their condition. It has been suggested that people whose appearance deviates from the norm have a heightened sense of body awareness and pressure to comply with social standards. This pressure has the capacity to affect not only personal and social activities such as relationships and hobbies (Porter et al., 1986), but also quality of life related goals and expectations (Lanigan and Cotterill, 1989).

According to Nadelson (1990), people with visible cutaneous conditions tend to be perceived as different from those whose appearance is unremarkable. Indeed, due to the social significance of the skin.

C) REVIEW OF STUDIES ON STRESS AND COPING IN CHRONIC ILLNESS GROUPS

Cohen and Lazarus (1979) have identified five main goals of coping efforts as common to most stressful situations. Coping may be sought to reduce harmful environmental conditions and enhance the prospect of recovery, to tolerate or adjust to the negative events or realities, to maintain a positive self-image, to keep emotional equilibrium and to preserve satisfying relationships with others.

Lazarus and Folkman (1984) and (Lazarus, 1993) have offered the most widely accepted definition of coping: changing cognitive and behavioral efforts to manage psychological stress. Many investigators interested in stress and coping have turned to daily process methods to examine the association between daily events and mood (Bolger and Schilling, 1991; Caspi et al., 1987; Clark and Watson, 1988; DeLongis et al., 1988) Many have also used this design to examine the relation of daily events to physical symptoms, including episodes of minor illness (Stone et al., 1987) and migraine
headaches (Kohler and Haimerl, 1990), as well as to the ebb and flow of symptoms of chronic illnesses such as diabetes (Aikens and Wallander, 1994) rheumatoid arthritis (Affleck et al., 1994), fibromyalgia (Hazlett, 1992), dermatitis (King and Wilson, 1991), irritable bowel syndrome (Levy et al., 1997), and systemic lupus (Adams et al., 1994). Lazarus (1993) contended that when a stressful encounter is viewed by the individual as being under his or her personal control, he or she will use problem-focused coping, whereas when the encounter is interpreted as being refractory to change, emotion-focused coping will predominate. In many stressful situations, the individual draws the inference that she or he lacks personal control after problem-focused efforts fail to produce a desired outcome.

Boothby et al. (1999) noted that the most heuristic and common theoretical framework utilized to conceptually stress the transactional model of stress. This transactional model of stress was originally introduced by Lazarus and Folkman (1984), and it highlights a number of important factors and processes involved in coping with stress, such as those associated with chronic illness. These factors and processes include the following:

- Individual or dispositional variables, such as one's personality, social roles, or biobehavioral characteristics, can affect an individual's response to a stressor such as chronic illness.

- Individuals often engage in an array of ever-changing and evolving appraisal processes that may influence their emotional responses to the chronic illness, including the potential coping responses.

- There are basically three types of stressful appraisals: those that suggest that the chronic disease poses a threat; those that suggest that the chronic disease poses a challenge; or those that suggest that the chronic disease will result in possible harm or loss.

- Beliefs about possible coping options, and their potential effectiveness, are frequently referred to as secondary appraisals.
• The actual coping responses utilized by patients to manage specific external or internal demands of a chronic disease will ultimately affect important adaptation outcomes, such as mental and physical health, social functioning, morale, and quality of life.

Life-change events, regardless of desirability, had a negative impact on health, empirical evidence more strongly implicates negative than positive events in both mental and physical illness (McFarlane et al., 1983). Siegel et al. (1988) found that accumulation of negatively rated circumstances was associated with illness symptoms and depressed mood. Prospective analyses showed that positively rated circumstances moderated the impact of negative circumstances on both illness symptoms and depressed mood. A Negative Circumstances X Grade interaction revealed that the effect of negative circumstances on depressed mood was primarily seen among the younger adolescents. Thus, as suggested by developmental research, early adolescence appears to be a time of relatively greater vulnerability to stress than middle or late adolescence.

Almost all previous studies of child and adolescent life stress (not including studies of college students) have consisted of cross-sectional investigations of the relation between negative life experiences and psychological and physical criteria (Johnson, 1986) and have consistently shown that an accumulation of recent negative events is positively related to psychological and physical health problems. In general, an accumulation of positive life events and psychological problems are negatively related, if at all (Swearingen and Cohen, 1985).

Cohen et al. (1987) reported only two child or adolescent studies to date have used an exhaustive review longitudinal design, in which the effects of accumulated life stress on psychological functioning were tested after initial psychological functioning was statistically controlled (Swearingen and Cohen, 1985). Despite very different measures and time frames, both of these studies found that adolescent's negative life experiences failed to predict change in the mental health criteria. This finding stands in sharp contrast to the findings in a
number of adult longitudinal studies that negative events served as a significant predictor of psychological functioning (Cohen et al., 1984).

Social problem-solving ability operates as a metacognitive construct, influencing the way an individual perceives, processes, and use information relevant to the self (Heppner and Krauskopf, 1987). Social-cognitive processes also operate in the ways people make inferences about their physiological status and sensations (Pennebaker, 1982), Elliott and Marmarosh (1994) found that ineffective problem solvers reported significantly more physical symptoms than effective problem solvers in the three weeks before assessment, at the time of assessment, and three months later than effective problem solvers. Ineffective problem solvers also reported a lower sense of personal control over their health and believed their health was influenced by chance, in comparison with the effective problem solvers.

In times of stress, individuals with ineffective problem-solving abilities often rely on emotion-focused and avoidant coping (MacNair and Elliott, 1992). Individuals who live with chronic disease (e.g., diabetes) and physical disability (e.g., spinal cord injury) are responsible daily for maintaining personal health by observing regimens for self-care, therapy, diet, monitoring symptoms, and integrity of bodily functions (e.g., skin inspections); failure to adhere to these regimens can result in complications that can lead to expensive episodes of care (e.g., emergency room visits, inpatient hospitalizations) and intensive interventions (e.g., amputations, skin-flap surgeries). Secondary complications are mediated largely by behavioral and social mechanisms that either prevent or facilitate the development of these conditions.

The construct of allostasis helps to explain how prolonged chronic stress influences physical health outcomes such as cardiovascular disease (Kamark et al., 1991), immunosuppression (Schneiderman et al., 1992), and diabetes (Bradley et al., 1988), and psychological outcomes such as depression (Avison et al., 1988), and anxiety (Eckenrode et al., 1984), McEwen and Stellar’s (1993), theory suggest a potential explanatory variable in the
relationship between chronic stress and poor health. The way in which children and adolescents cope with chronic health conditions is considered as an increasingly important predictor of health in clinical and psychosocial research (Boekaerts and Röder, 1999).

The possibility that a certain type of negative life event distinguishes patients with recurrent abdominal pain from other children is suggested by evidence that recurrent abdominal pain patients report more events involving family illness than do well children or psychiatric patients (Wasserman et al., 1988). This is why it was hypothesized and confirmed that recurrent abdominal pain patients would have experienced a greater total number of negative life events than well children and more health-related negative life events than both well children and other patient groups (Walker et al., 1993).

At the time of their clinic visit, patients with recurrent abdominal pain have been found to have higher levels of recent negative life events than well children (Robinson et al., 1990) but do not differ from psychiatric patients (Hodges et al., 1984) or patients with organic illness (Walker and Greene, 1991). On the basis of a review of the theoretical and empirical literature Hodges et al. (1992), concluded that recurrent abdominal pain patients would be characterized by frequent negative life events, low levels of competence, and family dysfunction. According to Walker et al. (1993), patients with recurrent abdominal pain had fewer negative life events than children with emotional disorders. Theoretical and empirical literature suggests that psychobiological reactivity might contribute to a stronger association between daily stressors and somatic symptoms in children with recurrent abdominal pain than in well children (Barr et al., 1994; Boyce et al., 1995).

According to Drossman et al. (1997), when compared with people without health problems or the nonclinical (community sample) population with similar gastrointestinal complaints, patients with irritable bowel syndrome tend to have higher psychosocial distress scores. Particularly in specialty clinics, people with irritable bowel syndrome seeking health care (Drossman et al., 1988; Whitehead et al., 1988), are less likely to see an association between
their irritable bowel syndrome symptoms and stress (Thompson et al., 1996; Toner, 1994) and have more severe medical symptoms and more general anxiety, depression (Talley et al., 1997), and health anxiety (Drossman et al., 1988).

Compas et al. (1999) proposed that recurrent abdominal pain is a problem of exposure to psychological stress, individual differences in reactions to stress, and maladaptive attempts to cope with stress. It is suggested that the ways in which a child responds to stress is the critical factor in determining the frequency and duration of recurrent abdominal pain (Compas et al., 1999; Walker, 1999). Engel (1977) first described a “biopsychosocial” model of illness in the 1970s; he proposed that illness is the product of biological, psychological and social subsystems interacting at multiple levels.

High frequency rates of sexual, physical, and emotional abuse in patients with functional gastrointestinal disorders, (30%-56%) have been reported from many different referral centers in the United States and Europe, (Ali et al., 2000) especially in specialist or secondary care clinics, (Longstreth et al., 1993) and these figures are significantly higher than those in healthy control groups. Which itself can be a greater contributor to the stress experienced by this population.

According to Wright et al. (1998) the hypothesis of an association between stress and asthma emerges from a wide range of clinical observation and evolving research. The general concept of the role of emotion and the social environment in disease is as old as medicine itself. Early references to the importance of emotional and psychological processes were put forth in a treatise on asthma by Maimonides, an influential medieval Rabbi, philosopher, and physician (Moses, 1981). Sir William Osler referred to asthma as “a neurotic affection” in his medical teaching in the latter part of the 19th century (Osler, 1892). Indeed, before we understood the inflammatory basis of asthma, it was among the disorders believed to be “purely” psychogenic in origin and was commonly referred to as asthma nervosa.
Scientific support for an association between psychological factors and asthma has its beginnings in the first part of the 20th century and derives from research in widely disparate fields. Early research suggesting that asthma had a psychosomatic component was strongly dominated by psychoanalytical theory, an extension of the Freudian idea that symptoms were a symbolic expression of unconscious conflicts and repressed desires (Freud, 1959). The so-called specific emotion theory, developed in large part by Alexander and colleagues (1968) at the Chicago Institute of Psychoanalysis beginning in the 1930s, was among the most influential work of this era. Concurrently, learning theorists argued that particular emotional experiences may have reinforced pulmonary physiological responses, thus increasing the likelihood of them recurring in the same context (Fenichel, 1945). More recently, published clinical studies have demonstrated the benefit of psychotherapy in treating asthmatic patients (Kellner, 1975) and relaxation techniques have been associated with improvement in respiration (Kotses et al., 1989).

Eventually, purely psychoanalytical and behavioural formulations gave way to physiological studies providing more objective support for the idea that emotions play an important role in asthma. Stress and psychological factors have been associated with asthma symptomatology (Lehrer et al., 1993) and with bronchoconstriction and reduction in pulmonary flow rates in asthmatic children (Isenberg et al., 1992). When subjected to stressful experiences such as performing emotionally charged films, (Miller and Wood al, 1994) and listening to stressful interactions, (Tal et al., 1976) 15-30% of asthmatic subjects responded with increased bronchoconstriction.

Taken together, these data clearly support an association between stress and asthma, although mechanisms linking stress and asthma remain poorly defined. A general model of the link between environmental demands as psychological stressors and health is reproduced in fig 5. When confronting environmental demands, individuals cognitively appraise whether the event is threatening or potentially overwhelming to their existing coping resources (Cohen et al., 1995). If environmental demands are found to be taxing or
threatening, and at the same time coping resources are viewed to be inadequate, then its perceived as being under stress. This perception is presumed to result in negative emotional states including fear, anger, anxiety, and depression. Changes in behavioural and emotional states that accompany the perception of, and the effort to adapt to, environmental circumstances are accompanied by complex patterns of neuroendocrine and immunological changes (Herbert and Cohen, 1993).

Fig 5. Biopsychosocial model of the stress process designed to illustrate the potential integration of the psychological and biological effects of environmental demands (Herbert and Cohen, 1993)
According to Creer et al. (1995) and Chaney et al. (1999) asthma is the most frequent chronic disease in children. Asthma serves as an ever-present stressor. The irregularity of asthma symptoms leads to uncertainty and unpredictability, which are considered to enhance stress and lead to feelings of helplessness. Sharma (2002) reported that asthmatic adolescents were higher on stress and strain in comparison to healthy adolescents.

In the pediatric literature, researchers have focused mainly on the teaching of strategies that help children to deal with asthma (self-management) (Bernard-Boddin et al., 1995) and painful medical procedures (Peterson, 1989). Although knowledge of effective coping with disease-related stress is valuable, it is also necessary to understand children's spontaneous ways of handling everyday stress. Various researchers have hypothesized that children with asthma have adapted their coping strategies to fit their daily experiences, which are, in many respects, different from those of children without asthma (Olson et al., 1993; Phipps, 1995). Only a few studies examined whether there are indeed differences in coping strategies between children with and without a chronic disease. Some studies (Ebata et al., 1991; Olson et al., 1993; Reid et al., 1995) revealed similarities in the use of coping strategies in response to stressors such as a peer conflict, giving an oral report and getting a dental injection. Differences have also been reported. Olson et al. (1993) found that, when blood sample was taken, chronically ill children used more cognitive coping strategies, such as positive self-talk or attention diversion than children without a chronic disease. Spirito et al. (1995) showed that chronically ill children used avoidance strategies less often (e.g., distraction and wishful thinking), in response to a hospital related stressor. The researchers of both studies attributed the differences between the two groups of children to the higher frequency of exposure to this kind of stressors.

According to Biondi (1999), it should be understood that hypothesizing a role of psychological factors in the etiology and pathogenesis of dermatological diseases is not a sort of mystical belief. Many physiological systems may account for an influence of the mind on the skin. For instance,
endocrine and immunological factor are commonly included among pathophysiological mechanisms of many skin diseases. It may be worth recalling that psychological stress affects the neuro-endocrine system and that a countless number of experimental studies emphasized the complex interplay between the mind, the brain and the immunes system, one of the most striking examples being provided by the possibility of classical conditioning of the immune response (Ader et al., 1990).

The possibility of a causal influence of emotional stress on the course of various skin diseases has long been raised, and recent questionnaire surveys have shown that many dermatologists and patients share the opinion that stress plays an important part in a variety of skin diseases (Rajka et al., 1986; Dahan et al., 1998). Clinical wisdom and experience, as well as a wealth of anecdotal observations and uncontrolled case series, support the common opinion that stressful life events can precipitate the onset and recurrence of many skin diseases or exert a negative influence on their course.

The literature is replete with extreme view points. Substantive knowledge is lacking (Strausberger, 1997). Acne is not a psychosomatic disease. Referring patients to psychiatrists is generally futile. On the other hand, acne can sensibly be regarded as a somatopsychic disorder in which the clinical expressions of the disease generate secondary psychological disturbances. Acne frequently worsens when emotional stress is superimposed. Anxiety deeply colors the disease and can greatly aggravate its expression and contribute to resistance to therapy. Accordingly, one has to treat the whole person as well as the lesions. Depressive episodes speak for the seriousness of this pestilential disorder.

Many dermatologists share the clinical opinion that stress plays an important role in atopic dermatitis (Rajka et al, 1986). And already some decades ago a number of investigators pointed out a relationship between emotional stress and atopic dermatitis. For instance, Greenhill and Finestinger (1942) reported that 55% of their 32 patients thought that...
emotional events were related to illness exacerbations. Wittkower and Edgell (1951) recognized a correlation between emotional stress and illness onset or exacerbation in as many as 86% of their 90 patients. Given their methodological limitations. Such as the use of insufficiently methods for retrospectively assessing life events, these studies do not provide convincing evidence of an association between stressful events and atopic dermatitis, although they have stimulated further research in this field. A subsequent investigation found a relationship between psychological stress and the onset or the relapse of atopic dermatitis, respectively, in 80 and 100% of 10 patients (Pullman et al., 1977). However, this study also suffers from the use of non-standardized methods for the assessment of stress as well as from the small sample size.

Patients frequently complain of acne flares in concomitance with anxiety, stress or frustration (Sulzberger et al., 1948; Shalita, 1980). In terms of psychological antecedents to atopic dermatitis, Brown (1967) found that his patients reported significantly more separation experiences in the year previous to the onset of their symptoms compared with a control sample of dental patients, and that 48% suffered from "severe shock, worry, or emotional upset" in the 6 months preceding the outbreak of their eczema. The atopic dermatitis group also reported significantly more frustration and anger under stress as compared with the control group. This suggests that a combination of both objective life situations and reaction to the stress generated by these situations may relate to dermatitis. Similarly, an early study using a large sample of atopic dermatitis patients (N = 100) found that over 70% reported antecedent emotional stressors related to disease onset (Wittkower and Russell, 1953).

Other plausible candidates for a mediating role between the mind and the skin are neuropeptides which have often been suggested as involved in the pathophysiology of skin diseases such as psoriasis and atopic dermatitis (Farber et al., 1986; Luger et al., 1998). Gil et al. (1987) investigated the relationship between life events and symptom severity rather than illness onset.
or relapse, in a sample of 44 children with severe atopic dermatitis. They measured stressful life events in the previous year with a standardized questionnaire specifically developed for children and measured also common daily problems and atopic dermatitis-related everyday problems in the past 6 months by means of two separate checklists. Neither life events in the previous year nor common daily problems in the preceding 6 months were correlated with measures of symptom severity. However, everyday problems and distress related to atopic dermatitis were strongly related to indices of symptom severity, even after controlling for demographic and medical status variables.

D) REVIEW STUDIES ON PERCEIVED SOCIAL SUPPORT, PERCEIVED PARENTAL BONDING AND FAMILY ENVIRONMENT IN CHRONIC ILLNESS GROUPS

Social support appears to be an important resource that can have a profound effect on the general well-being of any individual. More importantly, when that individual is ill, the significance and ramifications of social support increase dramatically. By physically helping patients to meet the demands of treatment or by providing emotional support, this assistance seems to be invaluable. Regardless of the type of disease, illness has an effect on the individual and on his or her social support network. Chronic and terminal diseases have a profound and long-term impact on the lifestyle and well-being of a person.

Social Support Hypotheses

A number of hypotheses have been proposed concerning the effects of social support on health and physical well-being. The stress-buffering hypothesis of social support is one of the most widely accepted regarding this effect. According to this hypothesis, social support offers a “buffer,” or protection, against the negative effects of stressful events and situations. This protection serves to provide the individual with an illness with coping resources that they can utilize. Thus, the stress response to the illness can be significantly decreased (Koopman et al., 2000).
Social support influences the way in which an individual adapts to illness (Koocher et al., 1981). In some cases, social support also seem to influence the actual outcomes of illness (Funch, 1983). There is a substantial body of evidence demonstrating a relationship between social support and a variety of health outcomes. In general, individuals who have access to social networks, or feel less lonely, are healthier than their counterparts who lack these social ties (La vest et al., 1997).

When Bowlby described attachment theory (Bowlby, 1969; Bowly, 1980), he provided a biological basis for understanding close, protective relationships. A central innovation of attachment theory was the recognition that a child’s desire for proximity to his or her mother is a biological drive which has been selected in evolution, rather than a behaviour which is learned to satisfy other biological drives such as hunger. If maintaining proximity is a fundamental need, attachment behaviour can be understood as a set of strategies that have been learned to achieve optimal proximity. An infant, defenseless on its own, maintains proximity to her or his mother through a complex system of communications and behaviours, which increase its chances of survival. Attachment behavior, such as smiling, vocalizing, crying and approaching, is the normal, adaptive response of a mammal to threat. Organized patterns of attachment behaviour emerge at a relatively fixed time for each species, in humans the second half of the first year (Ainsworth, 1978).

According to Maunder and Hunter (2001) an attachment type is the result of an internal working model that guides affects and behaviour when a threat is perceived. Presumably the neurological substrate for this internal working model has developed through the effects of highly salient conditioning in the first attachment. Attachment type is then and stood as a disposition toward certain perceptions of others, certain perceptions of self, and certain perception of a perceived threat. The emergence of attachment behaviour is largely context dependent, a state phenomenon, but the internal working
model that provide consistency to the pattern of behaviour that emerges in trait.

**Parental Bonding, Health and Disease Pathways**

As there is suggestive evidence from a range of studies favoring overall association of attachment insecurity and illness, **Maunder and Hunter (2001)** examined the possibility that insecure attachment contributes to disease processes. In reviewing the literature, authors developed a model describing paths by which insecure attachment could affect the course of disease. Fig 6 describes potential psychosomatic mechanisms that could account for a correlation of insecure attachment and disease. The model describes how insecure attachment may be associated with disturbances of stress regulation (Path 1), use of external regulators of affect (Path 2), and nonuse of protective behaviours (Path 3) (**Maunders and Hunter, 2001**).

![Fig 6. Model of Hypothesized Mechanisms by Which Attachment Security Could Contribute to the Disease (Maunder and Hunter, 2001).](image-url)
Path 1: Insecure Attachment may Affect Stress Regulation

Of the three proposed paths by which insecure attachment could affect disease, the role of stress is of particular interest from a physiological point of view. Attachment and stress are related developmentally because, on the one hand, the stress response has been selected in evolution to be triggered by environmental threat while, on the other hand, the function of the attachment system is to increase security in the face of environmental threat. It is proposed that there are three ways by which attachment may determine individual differences in the stress response.

According to Maunders and Hunter (2001), attachment insecurity may increase perceived stress. The internal working model describes the evaluative processes by which an individual deals with threat by negotiating proximity to trusted others. Included in this evaluation is a determination of what constitutes a threat, which may involve both qualitative experiential features of the environmental situation and a threshold for triggering attachment behaviour. Preoccupied attachment involves a self-perception of vulnerability, which may lead to a lower threshold for activating attachment behaviour.

Attachment insecurity may affect the intensity or duration of the physiological stress response which is highly regulated at multiple physiological levels. It is reasonable to assume that this complexity allows that central factors (such as insecure attachment) may modulate the system partially, allowing not only for individual differences in the initiation or no initiation of the stress cascade but also for modification of its intensity or duration. Attachment pattern may determine the success of social support in buffering stress. Social support has been widely studied as mediator of illness and is considered to be beneficial to range of health outcomes (House et al., 1988).
Path 2: Insecure Attachment may Result in Altered Use of External Regulators of Affect.

The next proposed etiological pathway concerns regulation of affect. Since insecure attachment results in deficits in internal affect regulation (Kobak and Sceery, 1999), it is expected that insecurity will be associated with greater use of external regulators. A number of behavioral strategies that are used to regulate dysphoric affect (to soothe, to distract, or to excite) are also risk factors for disease. Included among these are smoking tobacco, drinking alcohol, using other psychoactive drugs, over-eating, under-eating, and engaging in risky sexual activity. This path focuses on regulatory behavioral strategies, somewhat arbitrarily distinguishing these from the relationship factors (social support) that have been described above.

Maunders and Hunter (2001) reported that the relationship between adolescent coping, adolescent-parent relationship, and substance use is fairly well established, although the inferences that can be drawn regarding attachment are generally indirect. Adolescent substance users value social conformity less than nonusers (Will and Clearly, 1996), which is closely related to parental support (Will and Clearly, 1996) and strength of emotional bonds to family and friends (DeFronzo et al., 1993). Drug use in young adults is also related to parent-child attachment (Brook et al., 1998). Insecure attachment is associated with weight concern and lower self-esteem in adolescents (Sharpe et al., 1998).

Path 3: Insecure Attachment may Alter Use of Protective Factors

In addition to an excess of health risk behaviours, insecure attachment may also contribute to illness through the failure or nonuse of protective factors. One of the most important protective factors social support, has been described above. Two studies directly support the link between attachment insecurity and symptom reporting. In students who were making the transition from home to living at university, a relationship of avoidant attachment and physical symptoms was found, mediated by emotional self-control and emotion-focused coping (Kotler et al., 1994). This review finds supportive
evidence for the hypothesis that attachment insecurity contributes to physical illness.

FAMILY ENVIRONMENT

It has been suggested that the perception that the family takes care of stress or strain related to the caretaking of a sick or deformed family member is more important than its objective occurrence (Lazarus and Folkman, 1984).

Chancy and Peterson (1989) found that moderate levels of adaptability and cohesion, as opposed to extreme levels, contributed to greater medication adherence among children with juvenile rheumatic arthritis. Others have suggested that less adaptability (i.e., greater rigidity) may be functional among these families, given the need for adherence to strict treatment regimens (Kazak et al., 1988).

The family environment is the most basic and earliest social environment that children experience, and the quality of that experience and the relationships within it can have both direct and indirect effects on children's behaviors and competencies. For example, a positive family environment (i.e., a family environment low in conflict) has been related to fewer internalizing behavior problems and to greater sociability in children (Kronenberger and Thompson, 1990).

Positive parent-child relationships, with warm, competent parents who are involved in their children's lives and who provide guidance to their children, also play a key role in moderating the effects of stress for children, providing protection and blunting negative behavioral outcomes under conditions of high stress (Gribble et al., 1993). Conversely, a negative family environment (i.e., a family environment high in conflict) can potentiate children's behavior problems and exacerbate them (Wyman et al., 1992). Thus, the family environment can either serve as a protective function or confer a vulnerability to children in moderating behavioral responses to stress (Masten and Coatsworth, 1998).

Although the resilience literature has focused primarily on behavior problems as an outcome measure (Masten and Coatsworth, 1998), there is
increasing interest in stress effects on children's competencies. Generally, under high stress, children from negative or disadvantaged family environments are both less competent and more disruptive, as assessed by multiple methods, than children from positive or advantaged family environments (Masten et al., 1988).

In the case of childhood chronic illness, the course of child and family adaptation varies (Frank et al., 1998). Compas et al. (1995) provided a conceptual framework for understanding the pathways or trajectories that result in adaptive and maladaptive development (Fig.7). Child and family functioning are part of a continuum of adaptive and maladaptive outcomes that can remain static or change across time in response to risk and resistance factors.

![Fig.7 Five possible trajectories of functioning over time after the onset of a chronic illness (Compass et al., 1995)](image)

Risk factors decrease the likelihood of positive adaptation, whereas resistance factors increase its likelihood. Although "resilience" is often used as a broad term to denote adaptive functioning, it can also refer to one of three specific types of adaptive paths. These include hardiness, resilience, and enhanced functioning and occur when situations of adversity offer opportunities for children and families to hone coping skills and promote...
immunity to negative outcomes. Hardiness indicates that a child or family experience no negative or positive effects from a chronic illness and remain at a stable, functional level. Resilience suggests that the child or family experienced a temporary period of decreased functioning due to the illness, followed by a return to an adaptive level. Enhancement occurs when a child or family experience improved functioning or positive effects following an illness.

The maladaptive trajectories, which were the primary foci of early studies, include stable maladjustment and declining adjustment. Family influence on adolescents is continuing to change in some ways it is growing stronger, in some it is diminishing and in some ways it is simply different. Since the family is smaller today, the impact of individual family members on each other is correspondingly greater. A risk and resistance framework can help clarify factors that contribute to the variety of outcomes in response to a childhood chronic illness. Risk factors relevant to chronic illness include disease severity, major life events, and daily stressors. Parallel to research in the general population, resistance factors in chronic illness include individual characteristics (e.g., intelligence), family characteristics (e.g., cohesion), and community factors (e.g., support). However, chronic illnesses may present unique stressors that may foster or diminish resistance.

Chronic illness in children and adolescents has a devastating influence on them and their families. Malhotra and Singh (2002) studied the psychological consequences of chronic physical illness in children and adolescents. The patients have to cope with illness, medication and its influence on their development. Consequently, a large number of them land up with emotional disorders. Distress experienced by the family and disturbed family functioning directly influences the emotional outcome in physically disordered children.

According to Walker et al. (1993), recurrent abdominal pain patients had better family functioning, and higher competence than children with emotional disorders. In comparison with well children and psychiatric patients,
both recurrent abdominal pain and peptic disease patients had a higher incidence of illness in other family members and perceived greater parental encouragement of illness behavior for abdominal symptoms. Walker et al. (1993) also found in their study that in comparison with psychiatric patients and well children, recurrent abdominal pain and peptic disease patients had significantly more first degree relatives with current or past abdominal disorders and more relatives with other serious health conditions living in the home. This finding might reflect physical vulnerability due to genetic or environmental factors in the families of recurrent abdominal pain and peptic disease patients. In addition, the presence of ill family members may signal the influence of social psychological processes in the development of these children's illness behavior. Assessment of family characteristics indicated that families of recurrent abdominal pain patients did not differ from well families on measures of the quality of family relationships, maternal marital satisfaction, or parental psychopathology. Moreover, recurrent abdominal pain patients reported better family relationships, and mothers of these patients reported less frequent criticism in their families, in comparison with psychiatric patients and their mothers. Recurrent abdominal pain patients had higher levels of emotional and somatic symptoms and families characterized by a higher incidence of illness and greater encouragement of child illness behavior. However, recurrent abdominal pain patients did not differ from healthy children on measures of negative life events, competence, or family functioning.

A number of social learning phenomena can influence the clinical expression of abdominal pain, including modeling (i.e., where children observe and learn to display the illness behavior of their parents) and positive reinforcement. Children of adult patients with irritable bowel syndrome make more health care visits than the children of parents without irritable bowel syndrome, and this increased medical help seeking is not confined to gastrointestinal symptoms (Levy et al., 2000) According to Levy et al. (2003), preliminary research has shown that when parents of children with recurrent
abdominal pain are taught to reduce positive or sympathetic responses to their children's reports of pain, the frequency of these complaints decreases.

Complicating the severity of the symptoms and the stress of the family is psychosomatic asthma, which is wheezing related to child/family stress (Weinstein, 1987). This is manifested by the child's ability to induce asthma symptoms by yelling, crying, or deep breathing maneuvers. These "psychosomatic" attacks may affect child-sibling and child-parent relationship in a maladaptive way (Weinstein, 1987). While the characteristics of these child-parent relationships range over a continuum of possibilities, one can delineate two extremes. On one extreme is the hostile, rejecting relationship in which the child is seen as overly demanding and manipulative, "putting it on" (Pinkerton et al., 1969). These children may be blamed for the impact of the disease upon family life, for example, the work attendance problems of parents, truncation of vacations and trips, and the general emergency preparedness this disease can demand. At the other extreme, the child is seen as weak and vulnerable and an overly protective state is created (Pinkerton et al., 1969). These children may be allowed or encouraged to stay home from school. The reaction to illnesses and management of symptoms at home often includes "don't upset the child" or "over-stimulate" him for fear of inducing an attack (Weinstein et al., 1984). Because of the significant incidence of death from severe asthma, the family's justifiable concern of death from asthma is often present – overt or hidden (Strunk et al., 1985).

Prior to the 1970's the child with or without the family would infrequently be referred to a psychotherapist (French, 1939; French et al., 1941). The rationale for psychotherapy in the management of asthma is the premise that stress may induce asthma (i.e., psychosomatic asthma). Because children with severe asthma and their families were under significant stress as reviewed above, stress reduction via psychotherapy was considered to be a viable therapeutic modality. If this intervention was unsuccessful, "appendectomy," placement of the child in a chronic care facility for 1-2 years, was considered (Pinkerton et al., 1970). It was well recognized that many severely asthmatic
children, when removed from the home and placed in rehabilitation hospitals, would be asymptomatic during the stay but would relapse when removed from the home and placed in rehabilitation hospitals, would be asymptomatic during the stay but would be asymptomatic during the stay but would relapse when returned to their home (Peshkin, 1960). The family, troubled by its "noxious" effect on the child necessitating removal, faced more despair and hopelessness with recurrence of symptoms when the child returned, and compounding the family’s despair (Liebman et al., 1974). It was not clear whether psychological factors or environmental allergens at the home might be responsible for these symptoms.

For children the family as a support network has a significant influence on chronic disease. Family function is an important correlate of health outcomes in general and this has been shown to be the case for asthma as well. The role of disturbed family interaction could be either direct by increasing the psychological stress in the child, or indirect by providing poor methods for coping with stress in the family system (Minchin et al., 1979). Family characteristics are important because they constituted the foundation and direction for family therapy aimed at correcting dysfunctions family patterns and disengaging the children from the area of marital conflict (Minchin et al., 1979). Specifically, the structure and function of the family system must be changed to enable the patient to change his role as the symptom bearer of the family.

Several psychoanalysts have suggested that maternal and child relationship is atypical when the child is asthmatic. Systematic studies are evaluating the relationship between asthmatic children and their parents have consistently failed to show any atypical relationship between asthmatic children and their mothers (Gauthier et al., 1985). In asthma, insecure attachments may increase both the severity of asthmatic symptoms and the consequences of asthma for the children’s socio-emotional development (Maze et al., 1987).
According to Maze et al. (1987), children affected by asthmatic bronchitis disease may be at risk for developing insecure attachments as a consequence of the stressful conditions that characterize their relationships with parents. As children with asthma, they may experience disruptions in the establishment of appropriate autonomy as a result of their respiratory difficulties and multiple hospitalizations during the process of finding a balance between attachment and exploration.

According to Hermanns et al. (1989), and Tambeli et al. (1993), research on family life and child-rearing practices has not revealed a unique or specific pathogenic pattern of mother-child relationships in families of children with asthma. Nevertheless, several studies have highlighted that some of these families are characterized by, an overprotective relationship of the mother to the child with asthma and by excessive maternal anxiety. Such overprotective, anxious, and sometimes overly critical parental attitudes may become a permanent stressing condition, which could contribute to the increase of the frequency and the severity of asthmatic episodes. However, it remains difficult to establish cause effect relations between parenting and asthma, because the asthmatic condition may also increase feelings of overprotectiveness and anxiety in the parents (Carson et al., 1992).

Earlier reference to a family focused principally on mother and child. The early concept of rejecting mother yielded to that of an engulfing one (Knapp and Mathhe 1990), that fathers presumably play on important role in the family structure of asthmatics. In the study comparing patients with hay fever and asthma with healthy subjects, the allergic group significantly more often perceived their fathers as having been absent in one or another way for example physically out of the home, aloof or ineffective so that they failed to correct the imbalances between mother and child.

According to Madrid et al. (1991), asthmatic symptoms may interfere with the mother-child relationship. For instance, mothers may establish an overprotective and insecure-ambivalent attachment relationship with their child.
because they feel insecure about their ability to take adequate care of the sick child. Parents may also refrain from committing themselves to the bond with their child with recurrent asthmatic bronchitis and develop an insecure-avoidant relationship as a result of their feelings of anxiety. The illness of the child may constitute for the mother an emotion of such intensity that it interferes with bonding emotions.

The family relationships involve aspects of family interaction which included intra-family tension/relationships (Florez, 1980) family attitudes and various kinds of faulty mother-child relationship. Contrary to all these findings, Gauthier (1978) found more harmonious mother-child relationship than has been implied in the generally accepted concepts of infantile asthma. Results of Parker’s study (1979) suggested that parental over-protection was a consequence of asthma. It was a kind of adaptational response by parents to a child with a chronic, unpredictable illness arousing high levels of anxiety in parents.

According to Meijer et al. (1995), children whose families are more cohesive are more likely to have controlled rather than uncontrolled asthma. Weinstein et al. (1997) found that severely asthmatic children and families are at risk for developing psychological problems and family dysfunction as a result of persistent symptoms. Emotional expression in conjunction with breathing maneuvers may trigger asthma in children with significant airway hyperreactivity. Maintaining adherence with a complete treatment plan that includes medication, environmental recommendations and immunotherapy is essential to prevent/reduce symptoms. Integrated medical/psychological teams have evolved to address these issues and reduce pulmonary and psychological morbidity for the asthmatic child and family.

According to Bender et al. (1998), family Dysfunction and poor treatment adherence in asthma and poor self-management behavior was common among dysfunctional families. Lower adherence with medications has been associated with family dysfunction, specifically, absence of expressed
affection. Sharma (2002) found that asthmatic adolescents perceived their family environment to be high on conflict, moral religious emphasis and control dimensions.

The relationship between the child and the parent may have implications for the way in which the child makes sense of and coped with his/her deformity or illness. Research suggested that one of the most significant etiologic factors in the development of behavioural problems of children with deformities is the reaction of the parents to the illness or deformity of the child (Braden, 1990; Carey et al., 1977).

As in the case of any illness, the impact of skin disease will invariably have an effect not only on the person with the illness but also on his or her family. The diagnosis of a progressive or episodic skin condition within the family can be extremely stressful, with both the patient and family being unprepared for the physical and emotional changes that the illness will bring. Skin disease may bring a loss of subjective normality, the family’s concept of its ‘self’ is altered and new coping methods, role definitions and loss of, or changes in, plans and dreams are all prospects that the patient and his/her family will have to endure (McDaniel et al., 1992; Papadopoulos, 1994).

The above review clearly highlights the role of psychosocial factors in promoting resilience among the chronically ill. The same has been systematically investigated in the present study.