DISCUSSION

Adolescence is a developmental phase characterized by major changes on the physical, cognitive and emotional levels. As a result of the pubertal development, adolescents find themselves in a particularly sensitive period of development that is highly susceptible to disruptive factors. Physiologically, the accompanying pubertal development brings about changes in the young person's self-concept. Orientation and a reappraisal of the young person's self-concept. Orientation norms of the age group move more strongly into the foreground, and comparison of the self with the peer group gains greater significance. Relationships with parents also undergo a reorientation during this period, with the extent that peers gain in importance, parents, as a basis for the parents, are important development goals in adolescence.

According to Seiffge-Krenke and Schmidt, (1999) the diagnosis of an illness during this sensitive phase can therefore impede the achievement of adolescent specific development goals. Progress towards independence in relation to the parental home is thwarted by the unavoidable necessity of adjusting to the illness and obtaining adequate developmental opportunities. Chronic illness in childhood and adolescence also demands adaptive measures by the family of the patient. They require a high level of structure, organization and control in dealing with the condition (Seiffge-Krenke and Schmidt, 1999). Apart from the acquisition of specific knowledge regarding the illness and the development of new skills, there is a necessity for mobilizing suitable resources to facilitate the management of psychosocial difficulties that arise (Reichel and Schanz, 2003).
Focus on children and young adolescents in the primary prevention of health risks and disorders such as hypertension, Asthma, and other cardiovascular diseases, HIV/AIDS, and obesity has been suggested in many reports published throughout the world. Such a focus is important in India as it has a huge adolescents and children population along with the existing economic, social, and health inequalities among the general population. The population's economic, social, cultural, and geographic disparities contribute to wide variations in prevalence of chronic disorders in Indian children and adolescence (Selvan and Kurpad, 2004).

The management of chronic illnesses represents an important part of pediatric practice in Western countries and takes a particular form in adolescence (Narring et al., 2000). The health needs of adolescents with a chronic illness or a handicap are indeed linked to the illness they suffer from, to adolescence in general, and to psychosocial problems generated by the interaction between the illness, the adolescent and his immediate environment (Valencia and Cromer, 2000). The international literature concerning chronic illnesses in adolescence highlights the importance of these pathologies to the practitioners, who rarely see these adolescents (Valencia and Cromer, 2000). However, the prevalence of chronic illnesses in adolescence is not well known and varies considerably from one survey to another: most surveys suggest that around 10% of children and adolescents may be affected by chronic illnesses (Suris, 1995). Considerable variations in the definition of chronic illnesses and in the survey methods prevent international comparisons (Westbrook et al., 1998). Several authors have suggested that recent progress made in prenatal and pediatric care has helped to improve survival of patients and therefore is responsible for a higher prevalence of chronic illnesses in adolescence (Suris, 1995). This prevalence is important, as chronic illnesses have a high economic and social impact due to invalidity, or need for health care facilities, which are sometimes highly specialized. This problem has become a priority on a public health level and needs to be carefully evaluated, particularly in developed and developing countries. Despite the highly specialized care available in western
countries, the facilities have not always been adapted to the adolescent’s needs, considering that the chronic illnesses affects the young patient in his global process of development. Adolescents affected by chronic illnesses or handicaps have to deal with the same problems and needs as all other adolescents, in puberty and sexuality development, in school and leisure time, in their relationship with peers, in life styles and risk taking, and in somatic health (Taddeo and Frappier, 1997).

According to Miauton et al. (2003), results of some studies have shown that despite the feeling of overprotection and the urge to comply with treatment induced by the illness, adolescents affected by a chronic illness or handicap do not take fewer risks than others. They are as sexually active and are not less exposed than others to the risk of pregnancy or sexually transmitted diseases (Sawyer et al., 2001). Drug and alcohol use or risk taking whilst driving, for example, are as frequent or even more frequent than in others (Frey et al., 1997). These young people, because of chronic illnesses or handicaps, might feel the need to assert their conformity by testing the norms (Blum, 1992) and by adopting so called “risk-taking behaviours” (Alvin and Marcelli, 1997). A great number of chronic illnesses have consequences on the assessment these adolescents make of their well-being (Tadeo et al., 1997). The difficulties they experience may increase the occurrence of problems such as tiredness, difficulties in socializing, harassment (from others), depression, or suicidal ideations (Suris, 1996).

Each disorder of course, has a distinct biological process and can result in diverse, often demanding treatment regimens. Most treatment is conducted in specialty clinics by specialists focusing on one illness. Research in this area also tends to be diagnosis specific. Despite the biomedical uniqueness of each illness, there is considerable commonality in psychosocial ramifications. Because of these commonalities, Pless and Pinkerton (1975) argued that psychological study and treatment of children and chronic disorder would benefit from a "non-categorical approach" (Wallander and Varni, 1998).
Meijer et al. (2000) studied behavioural, cognitive, and affective aspects of social functioning of children with a chronic illness, and they suggested that social consequences of chronic illness are not diagnosis specific. Rolland (1994) suggested that different physical disorders might share nature of onset and course, life threat potential, intrusiveness/ pain of treatment, secondary functional and cognitive disability, and visibility/social stigma. Further more, the burden of daily care almost always falls on the family. They suggested further that it is the variation within each of these psychological dimensions that would have implications for adjustment rather than different medical diagnoses. A broader , non categorical conceptual approach—one that is not specific to each disorder, but focuses on these psychosocial commonalities in the class of chronic physical disorders—could enhance our understanding of the impact on the psychological adjustment of chronically ill children and adolescents, and their families, and could improve care. This long standing, but empirically under-studied notion warrants further evaluation.

Review of literature reveals that chronic illness appears to be a definite risk factor for the well-being of adolescents. However, the literature remains ambiguous or inconclusive when it comes to the identification of moderating or protective factors mediating the impact of the chronic illness on adolescents and their families. One important reason for this research on chronic illness is that most of the research is specific to a particular disease like patients with a particular disease and its comparison with normal populations or with subpopulations within the same diagnostic category, hence making it difficult to study the similarities and dissimilarities across different illness conditions. Given the paucity of studies regarding comparison of different illness groups, it is difficult to determine whether differences exist as a function of type of illness. Review of literature though not conclusive, but it does suggest that certain factors like, perceived social support, attachment with parental figures, personality, ways of coping, self esteem and family environment intervening between the chronic illness and mental health of adolescents making them either vulnerable or resilient while facing the chronic illness (Dingle and, 2004).
Sexon, 2004). Hence, it does become important to assess each child, family, and situation individually to determine their level of function and distress. Identifying this, the health professional can take the most adaptive approach for that child at that time, providing a protective function and minimizing overt emotional distress.

The present study aimed at studying this variation, as to which are those protective and risk factors that facilitate maintaining good mental health in some adolescents and leads to breakdown of others while facing the same chronic illness. Another important aim of the study was to explore gender differences in all the disease groups on the above variables.

Therefore the primary aim of the present investigation was to compare the chronically ill adolescents scoring high on mental health with chronically ill adolescents scoring low on mental health on Depression, Perceived Social Support, Perceived Parental Bonding Dimensions, Measures of Stress, Ways of Coping, Eysenckian Personality Dimensions, Self Esteem and Family Environment dimensions viz. Relationship Dimension, Personal Growth Dimension and System Maintenance Dimension. Focus was also to explore the gender differences on the above mentioned variables in all the chronic disease groups.

Mental Health was measured using the General Health Questionnaire (GHQ) devised by Goldberg and William (1988). Depression was assessed by Beck Depression Inventory by Beck et al. (1967).

Perceived Social support was assessed using the Social Support Scale developed by Zimet et al. (1988).

Perceived Parental Bonding was measured by Parental Bonding Instrument by Parker et al. (1979). It has two dimensions viz. Perceived Parental Care and Perceived Parental Overprotection.
Discussion

(1984) was used to measure Life Event Stressors; Stress Symptoms Rating Scale devised by Heilbrun and Pepe (1985) was used to measure Stress Symptoms.

To assess different coping strategies, the Ways of Coping (WOC) Questionnaire devised by Folkman and Lazarus (1985) was used.

Personality was measured using Eysenck’s Personality Questionnaire – Revised (EPQ-R) devised by Eysenck et al. (1985).

Self Esteem was measured using Rosenberg Self Esteem Scale by Rosenberg (1965).

Family Environment Scale (FES) developed by Joshi and Vyas, (1985) was used.

Subjects’ groups were matched on age and socio economic status. All the subjects were explained about the nature and aim of the investigation and their role in the study and informed consent was obtained from all of them before they were enlisted as subjects.

The raw scores consisted of scores on all the above mentioned variables. In all 34 variables were studied in the following groups, keeping the focus primarily on High Mental Health Group (N=88) And Low Mental Health Group (N=144) in the Total Disease Group. Based on the norms of General Health Questionnaire-30 score of 6 was taken as the cut off point to divide the group into high and low mental health groups. Those scored below 6 were categorized as High Mental Health Group (HMH) and those scored above 6 were categorized as Low Mental Health Group (LMH), those who scored 6 on GHQ were considered as borderline case and were not included in the mental health groups. The raw scores were analyzed using appropriate statistical techniques. Means and standard deviation were calculated for all the groups. t-ratios were also calculated to find out the significance of differences between means of various groups on the measured variables.
groups. \textit{t-ratios} were also calculated to find out the significance of differences between means of various groups on the measured variables.

\textbf{2X2 Analysis of Variance (ANOVA)} was conducted for mental health and gender as independent variables. 2 levels of mental health viz. high mental health and low mental health were taken and 2 levels of gender viz. male and female were taken. The effect of these two independent variables singly and jointly was analyzed for all 33 variables.

\textbf{Correlation analysis} was done to study the relationship of mental health as measured by General Health Quetionnaire-30 with the other variables under study.

Further since the number of predictor variables in the study were very large \textbf{Stepwise Discriminant Functional Analyses} were conducted. \textbf{Stepwise Multiple Regression} was used to derive regression equations to delineate the significant predictors of Mental Health in various groups.

The raw scores were analyzed using appropriate statistical techniques. means and standard deviations for all the groups were calculated. Table 1 shows means and standard deviations for the Total Disease Group on 34 variables.

\textit{t-ratios} were also calculated to find out the significant differences between various groups on the measured variables. Table 2 shows means, standard deviations and \textit{t}-ratios for comparing Gastrointestinal Disorder Group, Respiratory Disorder Group and Skin Disorder group on 34 variables, the same has been graphically presented in figures 1a to 1h. Table 3 shows means, standard deviations and \textit{t}-ratios for comparing high mental health group and low mental health group in Total Disease Group, the same has been graphically presented in figures 2a to 2h on 33 variables. Table 4 shows means, standard deviations and \textit{t}-ratios for comparing high mental health group and low mental health group in Gastrointestinal Disorder Group. Table 5 shows means, standard deviations and \textit{t}-ratios for comparing high mental health group and low mental health group in Respiratory Disorder Group. Table 6 shows means, standard deviations and \textit{t}-
comparing male and female adolescents in Total Disease Group, the same has been graphically presented graphically in figure 3a to 3h on 34 variables. Table 8 shows means, standard deviations and t-ratios comparing male and female adolescents in Gastrointestinal Disorder Group, the same has been presented graphically in figure 4a to 4h on 34 variables. Table 9 shows means, standard deviations and t-ratios for comparing male and female adolescents in Respiratory Disorder Group and same has been graphically presented in figures 5a to 5h on 34 variables. Table 10 shows means, standard deviations and t-ratios for comparing differences in male and female adolescents in Skin Disorder Group, the same has been graphically presented in figure 6a to 6h on 34 variables. Table 11 shows means, standard deviations and t-ratios for comparing the male and female adolescents in Healthy Group.

Tables 12 to 44 show Analysis of Variance with mental health and gender as independent variables. The effect of these two independent variables singly and jointly was analyzed for all 33 variables.

Tables 45a-45d show Discriminant Functional Analysis(DFA) comparing groups namely high mental health and low mental health groups in Total Disease Group and separately for each chronic disease group namely- Gastrointestinal Disorder Group, Respiratory Disorder Group and Skin Disorder Group respectively. Table 45e show Discriminant Functional Analysis comparing 3 chronic disease groups namely: Gastrointestinal Disorder Group, Respiratory Disorder Group and Skin Disorder Group. Table 46a-46d shows Discriminant Functional Analysis comparing adolescent males and adolescent females in Total Disease Group, and separately for adolescent males and adolescent females for each chronic disease groups namely: Gastrointestinal Disorder, Respiratory Disorder Group and Skin Disorder Group respectively.

Tables 47 a to 47 i show the intercorrelation matrices for the 9 groups. Table 47 a shows intercorrelation matrix for Total Disease Group for 34 variables. Table 47 b shows intercorrelation matrix for Gastrointestinal Disorder Group for 34 variables. Table 47 c shows intercorrelation matrix for Respiratory Disorder Group for 34 variables. Table 47 d shows intercorrelation
Group for 34 variables. Table 47 c shows intercorrelation matrix for Respiratory Disorder Group for 34 variables. Table 47 d shows intercorrelation matrix for Skin Disorder Group for 34 variables. Table 47 e shows intercorrelation matrix for Healthy Group for 34 variables. Table 47 f shows intercorrelation matrix for high mental health group in Total Disease Group for 33 variables. Table 47 g shows intercorrelation matrix for low mental health group in Total Disease Group for 33 variables. Table 47 h shows intercorrelation matrix for male adolescents in Total Disease Group for 34 variables. Table 47 i shows intercorrelation matrix for female adolescents in Total Disease Group for 34 variables.

Tables (48a-48e) (49a-49b) show the Regression Analysis done for all the groups viz. Total Disease Group, Gastrointestinal Disorder Group, Respiratory Disorder Group, Skin Disorder Group, Healthy Group, male adolescents in Total Disease Group and female adolescents in Total Disease Group respectively with GHQ as the criterion variable.

A) MENTAL HEALTH AND CHRONIC ILLNESS

Depression, Mental Health and Chronic Illness

It was hypothesized that high mental health group was expected to score lower on Depression in comparison to Low mental health group in all the chronic disease groups.

Tables 3, 4, 5 and 6 revealed means, standard deviations and t-ratios for the high mental health group and low mental health group of Total Disease Group, Gastrointestinal Disorder Group, Respiratory Disorder Group and Skin Disorder respectively. In all the 4 groups t-ratio emerged significant on Depression [for Total Disease Group (t= 7.88,9.40<18.77); for Gastrointestinal Disorder Group (t= 4.21,12.11<20.26); for Respiratory Disorder Group (t= 4.18,9.97<18.52) and for Skin Disorder Group(t= 4.80, 8.12<16.64)].

A perusal of Analysis of Variance (table 13) revealed that F-ratio for mental health emerged significant for Depression (F= 61.79, p< at 0.01).
Gastrointestinal Disorder group (table 45b), Respiratory Disorder Group (table 45c) and Skin Disorder Group (Table 45d) revealed that Depression emerged as a significant discriminant for Total Disease Group (λ=.74); for Gastrointestinal Disorder Group (λ=.78); for Respiratory Disorder Group (λ=.82) and for Skin Disorder Group (λ=.75).

The above findings support the hypothesis on Depression in all the chronic disease groups.

Among gastrointestinal disorder patients, many earlier studied have reported depression. **Walker and Greene (1989)** reported that recurrent abdominal pain and organic patients had higher anxiety, depression, and somatic complaints than recovered patients. Anxiety, depression, and somatization were greater in recurrent abdominal pain mothers than well mothers. Father’s symptomatology did not differ for the groups. According to **Wald et al. (1989)**, patients with severe constipation and normal intestinal transit often had increased psychological distress, and reported constipation in depressed patients. According to **Ahmad et al. (2003)**, Constipated children displayed more anxiety related to toilet training and often evolved a coping style based on denial.

**Dorn et al. (2003)** compared the psychiatric clinical symptoms and diagnoses and physiological measures of a group of children with recurrent abdominal pain to a group with proven anxiety disorder and a physically healthy control group. Most notable observation was that children with anxiety disorder group and recurrent abdominal pain groups exhibited symptoms and physiological findings that in general had more shared similarities than either group with the healthy control group.

**Lea (2003)** reported that in irritable bowel syndrome, psychosocial disturbance, especially in referred patients, included psychiatric disorders (e.g., panic disorder, generalized anxiety disorder, mood disorder, and post-traumatic stress disorder), sleep disturbances, and dysfunctional coping. The symptoms of anxiety, depression, and somatization described in children with
traumatic stress disorder), sleep disturbances, and dysfunctional coping. The symptoms of anxiety, depression, and somatization described in children with recurrent abdominal pain and their parents may be applied to children with functional abdominal pain and those with irritable bowel syndrome and functional dyspepsia seen in both the primary and specialty care setting (Dorn et al., 2003; Campo et al., 2004; Di Lorenzo et al., 2005).

Psychiatric disorders are found to be associated with alterations in the processing of visceral sensation in patients with functional gastrointestinal disorder (Guthrie et al., 2004). Patients with functional gastrointestinal disorders, who have a concomitant psychiatric diagnosis may also manifest alterations in gut-related autonomic nervous system function, affecting gut motility and sensation. Psychiatric disorders may directly impair health-related quality of life (Creed et al., 2001).

Possible mechanisms mediating the association between abuse history and poor outcome of gastrointestinal disorder include: concurrent psychiatric disorders, moderate levels of psychological distress, and the tendency to report a large number of bodily symptoms (Hobbis et al., 2002); altered appraisal of bodily symptoms (i.e., increased hyper vigilance to normal bodily sensations) and maladaptive coping styles (e.g., “catastrophizing,” feelings of helplessness or inability to control symptoms (Salmon et al., 2003); impaired adult relationships (lack of social support) (Jarrett et al., 2003); centrally lowered threshold for perceiving afferent gastrointestinal signals; increased autonomic function and or intestinal motility due to hyper arousal (Jarrett et al., 2003).

A variety of neuroendocrine pathways have been implicated in stress-induced alterations in gastrointestinal function (Tache et al., 2001). Activation of central nervous system circuits that include the emotional motor system lead to neuroendocrine responses such as the release of corticotrophin-releasing factor, cortisol, and norepinephrine and epinephrine. There is a positive correlation between subjective sleep disturbances and
Kaminsky et al. (2006) examined the associations between coping style, social support, self-efficacy, locus of control, maternal adjustment, and depressive symptoms in children with recurrent abdominal pain. They found that coping style, self-efficacy, social support, and maternal adjustment were correlates of depressive symptoms in children with recurrent abdominal pain.

Mackner et al. (2006) compared psychosocial adjustment among adolescents with a chronic illness to that of healthy adolescents. They reported adolescents with a chronic illness such as irritable bowel disorder may be at higher risk for difficulties in social functioning and anxiety or depression symptoms than healthy adolescents, but the difficulties did not reach clinical significance for most adolescents.

Spiegal et al. (2007) in their systematic review to summarize and interpret published data linking chronic abdominal pain syndromes and suicidal behaviours, reported that patients with non-irritable bowel syndrome syndromes were 3–11 times more likely to demonstrate suicidal behaviour vs. controls, while patients with irritable bowel syndrome were two to four times more likely to have suicidal behaviour. Chronic abdominal pain was an independent predictor of suicidal behaviour after adjusting for co-morbid psychiatric conditions. Chronic abdominal pain syndromes increase the risk for suicidal behaviours. This relationship may exist independently of co-morbid depression, although additional research is needed to better understand this link. The data indicated that clinicians should survey for suicidal behaviour in chronic abdominal pain patients.

In asthmatic patients also, many studies have investigated the relationship between asthma with depressive and anxiety disorders. Numerous studies noted elevated rates of anxiety symptoms including panic attacks, panic symptoms, overanxious disorder and separation anxiety disorder in clinical samples of pediatric and adult asthma patients (Yellowlees et al., 1987; Bussing et al., 1996; Perna et al., 1997; Carr, 1998; Koltek et al., 1998; Brown et al., 2000; Vila et al., 2000; Afari et al., 2001; Goethe et al.,
Comprehensive research in child health has been carried out onto the effects of asthma on the child’s psychosocial functioning in daily life. Psychosocial functioning encompasses three dimensions: psychological functioning, social functioning, and school performance. Both Celano and Geller (1990) and Bender (1995) concluded in their reviews that studies evaluating school performance of asthmatic children with objective measures, such as standardized tests, did not support the conclusion that this group was at risk for a learning disability or low school performance when compared to often relied on subjective measures, such as parental concern about the child’s school performance (Fowler et al., 1992) or parental ratings of the child’s learning and concentration problems (Wjst et al., 1996).

Bell et al. (1991) found more allergies and a higher rate of asthma among people reporting a greater number of depressive symptoms in a nonclinical sample of 379 college students. There also may be a genetic link between asthma and certain mood disorders (Wamboldt et al., 2000). According to Silverglade et al. (1994), those with asthma, especially children, also appear to be more likely than healthy individuals to experience negative emotions without expressing them.

Bussing et al. (1996) reported that 43.2% of children with asthma in an outpatient pediatric practice met criteria for an anxiety disorder vs. 19.4% in 25 healthy controls. Previous data have suggested an association between some physical illnesses and an increased likelihood of suicidal ideation and suicide behaviour (Gupta and Gupta, 1998; Stenager and Stenager, 2000).

The relationship between asthma and depression, although less well established, also may be bidirectional. Miller and Wood (1997) demonstrated that film-induced sadness can produce broncho-constriction among children.
to uncertainty and unpredictability, which are considered to enhance stress and lead to feelings of helplessness (Chaney et al., 1999). Patients with asthma, especially children, appear particularly likely to suffer from psychological problems, particularly anxiety disorders (Vila et al., 1999). Evidence from several recent studies suggested that asthma is associated with an increased likelihood of suicidal ideation among medical inpatients and outpatients (Druss and Pincus, 2000).

Roder et al. (2000) found significant number of parents believed that asthma or medication caused learning problems in their child, when, in fact, these children’s (objective) scores on achievement tests were as high as those of a normative group. On the basis of studies reviewed on psychosocial functioning of children with asthma, it could be concluded that they function equally well as other children in many respects. Problems reported by parents mainly refer to internalizing behaviour problems, especially to depression and anxiety disorders. When children themselves were the informants, no differences were found. Children with severe asthma showed higher scores on internalizing behaviour problems and on rejection by peers (Mcquaid et al., 2001).

Gillapsy et al. (2002) found that high-risk adolescents with asthma may be more likely to experience psychological distress than those without asthma. Their findings suggested that asthma constitutes an additional significant independent stressor or risk factor among adolescents who already are at high risk for multiple adjustment problems. Ortega and colleagues (2002) examined 1285 young people in a community based sample and they found an association between asthma and increased prevalence of social phobia, separation anxiety disorder and overanxious disorder, but not depression, among 9-to 17-year-olds. Weisberg et al. (2002) reported an elevated prevalence of asthma in primary-care patients with post-traumatic disorder, compared to those without.
According to Lehrer et al. (2002), asthma can be affected by stress, anxiety, sadness, and suggestion, as well as by environmental irritants or allergens, exercise, and infection. It is associated with an elevated prevalence of anxiety and depressive disorders. Asthma and these psychological states and traits may mutually potentiate each other through direct psycho-physiological mediation, nonadherence to medical regimen, exposure to asthma triggers, and inaccuracy of asthma symptom perception. Defensiveness is associated with inaccurate perception of airway resistance and stress-related broncho-constriction. They also found that some of the common effects of asthma also can contribute to depression, particularly fatigue, disability, and self-perception as being sick.

According to Chen et al. (2006), asthma is more common among children and adolescents, among whom the prevalence has more than doubled over the past 30 years. Asthma among youth is associated with impairment in school and social functioning, symptoms of depression, anxiety symptoms, and anxiety disorders. They also reported that their findings were relatively consistent with data showing the strong association between asthma and depression in a variety of samples (Gillaspy et al., 2002; Goldney et al., 2003). The reason for this association was unclear. It could be that having asthma lead to thoughts that life is not worth living as a result of pain, discomfort, and functional impairment resulting from the disease. However, variables like social differences and mental disorders were controlled, which decreased the plausibility of this explanation. It was also conceived that individuals with suicidal ideation are more likely to interpret respiratory symptoms as a serious medical disorder, and self-report or be diagnosed with asthma, compared with those without suicidal ideation or mental distress who may be more likely to ignore these problems (Chen et al., 2006).

Richardson et al. (2006) examined the relationship between youth-reported asthma symptoms, presence of anxiety or depressive disorders, and objective measures of asthma severity among a population-based sample of youth with asthma. The presence of an anxiety or depressive disorder was
highly associated with increased asthma symptom burden for youth with asthma.

According to Goldbeck et al. (2007), asthma has been found to be related to a higher risk of psychological problems. There may be a complex relationship between asthma severity, quality of life, and psychological factors. The authors examined the impact of asthma severity and emotional/behavioural problems on the quality of life of children and adolescents and on their need for support. Quality of life and the need for social support were significantly correlated with psychological symptoms. Asthma severity was neither correlated with quality of life nor with emotional/behavioural symptoms, but it was associated with the need for support due to asthma.

As regards skin disorders, dermatological patients are extremely reluctant to take a referral to a mental health professional, because there is still a severe stigma associated with mental illness, hence fewer studies are there. The general importance of psychological factors in dermatological disorders has been illustrated in several studies. Sanborn et al. (1972) found that 2.7% of admissions to a United States Veterans Affairs hospital were for skin disorders. They also found that 6 of 64 patients (9.4%) who had completed suicides suffered from dermatological disease and associated anxiety and depressive symptoms. This is a higher rate than would be expected for nonpsychiatric patients. All of the patients who committed suicide had seen a physician within 6 weeks of committing suicide, two thirds of them within 14 days. Sanborn et al. also reported that the occurrence of dermatological flare-ups seemed to be associated with emotional stress for these patients.

Jowett and Ryan (1985) analyzed the effects of three skin disorders on patients' overall emotional, social, and functional relationships. Using a semi-structured interview, they interviewed 100 patients over the age of 16 years with a dermatological illness for at least 12 months. Subjects included 30 patients with acne, 38 with psoriasis, and 32 with eczema. Eighty-two percent
of the patients had noticeable skin lesions on their hands, face, and other visible areas. In terms of psychiatric dysfunction, 61% of the patients experienced anxiety, and 29% experienced depression. In addition, 64% of the patients reported that the skin conditions adversely affected their socioeconomic activity, and 40% said that their social life was adversely affected. Forty seven percent of the patients with eczema, 3% with acne, and 26% with psoriasis reported family friction. They also found that 80% of these patients reported severe shame and embarrassment, but those patients who developed the condition either late in life or had it from the earliest days of infancy reported less shame and embarrassment. In summary, this survey clearly demonstrated that skin disease could be associated with severe emotional and functional handicaps.

Several well-controlled studies have shown increased levels of anxiety and anger in acne patients when compared with patients with pityriasis rosacea (periodically erupting patches of scaly red skin) and controls with no skin condition (Van der Meeren et al., 1985). Hughes and his colleagues (1985) found that high GHQ scores which is indicative of poor mental health were found to be associated with the diagnosis of acne, while other studies have reported marked impairment in emotional well being (Cassileth et al., 1982), elevated anxiety (Van der Meeren et al., 1985), death wishes and suicidal ideation in patients with acne (Gupta et al., 1998).

Wu et al. (1988) found social impairments to be linked with the severity of acne and the extent of self-image impairment and clinical depression (Conifer et al., 1989). Many Studies have documented the fact that acne may significantly interfere with social interactions such as dating and sports participation and is implicated in poor academic functioning and unemployment (Motley and Finlay, 1989).

Aktan et al. (1998) reported prevalence of 41% of psychiatric morbidity in dermatological population using GHQ-12. Most identified cases were
affected by a depressive disorder, an anxiety disorder or a somatoform disorder.

Eysenckian Personality Dimensions, Self Esteem, Mental Health and Chronic Illness

a. It was hypothesized that high mental health group was expected to score higher on Extraversion in comparison to low mental health group in all the chronic disease groups. It was also hypothesized that high mental health group was expected to score lower on Neuroticism and Psychoticism in comparison to low mental health group in all the chronic disease groups.

Table 3 reveals means, standard deviations and t-ratios comparing the high mental health group (HMH) and low mental health group (LMH) in Total Disease Group. t-ratios emerged significant for Psychoticism (t= 2.28, HMH<LMH) and Neuroticism ( t= 4.18, HMH<LMH).

Table 4 reveals means, standard deviations and t-ratios comparing the high mental health group (HMH) and low mental health group (LMH) in Gastrointestinal Disorder Group. t-ratio emerged significant for Neuroticism (t= 2.40, HMH<LMH).

Table 5 reveals means, standard deviations and t-ratios comparing the high mental health group (HMH) and low mental health group (LMH) in Respiratory Disorder Group. t-ratios emerged significant for Psychoticism (t= 2.18, HMH<LMH); Neuroticism (t= 3.59, HMH<LMH) and Extraversion (t= 2.92, HMH>LMH).

Table 6 reveals means, standard deviations and t-ratios comparing the high mental health group (HMH) and low mental health group (LMH) in Skin Disorder Group. t-ratio emerged significant for Extraversion (t= 2.24, HMH<LMH).

A perusal of Analysis of Variance tables (Table 27, 29) revealed that F-ratios for mental health emerged significant for Psychoticism (F=5.05, p< 0.05) and Neuroticism (F=20.01, p< 0.01).
A perusal of Discriminant Functional Analysis comparing high mental health and low mental health groups in Total Disease Group (table 45a) revealed that Neuroticism ($\lambda=.70$) and Social Desirability (Lie Score) ($\lambda=.66$) emerged as significant discriminants.

A perusal of Discriminant Functional Analysis comparing high mental health and low mental health groups in Gastrointestinal Disorder Group (table 45b) revealed that only Neuroticism ($\lambda=.60$) emerged as significant discriminant.

A perusal of Discriminant Functional Analysis comparing high mental health and low mental health groups in Respiratory Disorder Group (table 45c) revealed that Extraversion ($\lambda=.62$) and Neuroticism ($\lambda=.57$) emerged as significant discriminants.

A perusal of Discriminant Functional Analysis comparing high mental health and low mental health groups in Skin Disorder Group (table 45d) revealed that only Neuroticism ($\lambda=.75$) emerged as a significant discriminant.

The above findings support the hypothesis for Eysenckian Personality dimension on Neuroticism for the Total Disease Group, Gastrointestinal Disorder Group, Respiratory Disorder Group and Skin Disorder Group. On Psychoticism hypothesis was supported only for Total Disease Group and Respiratory Disorder Group. On Extraversion hypothesis was supported only for Respiratory Disorder Group and Skin Disorder Group.

Personality plays an important role in the illness. According to Dingle and Sexson (2004), chronic illnesses usually mean significant alterations in expectations for the child's present and future functioning. Resilience factors such as temperament, intelligence, and coping styles appear to moderate psychosocial functioning through an impact upon risk factors and an association with adaptive functioning. Generally, individuals with higher intelligence, adaptable temperaments, and flexible coping strategies do better. Children tend to use various psychological defense mechanisms based on
Discussion

experience, modeling, developmental level, and innate capacities. Individual often require time and support to be able to accommodate to having an illness and its impact on their daily life and function. Learning about and dealing with having a chronic illness is psychologically equivalent to mourning or grieving a significant loss.

In terms of general models, recent research using meta-analysis suggests that a negative affective style marked by depression, anxiety, and hostility may be associated with the development of several chronic diseases, including coronary artery disease, asthma, proneness to headaches, ulcers, and arthritis (Peterson et al., 1988). These findings suggest the possibility of a disease-prone personality, although at present the exact nature of the relationship is uncertain. Negative emotional states clearly result from illness, but longitudinal studies also suggest the reverse direction of causality. According to Taylor and Aspinwall (1996), the biopsychosocial pathways whereby such relationships might occur are an obvious direction for future research: a negative emotional state may produce pathogenic physiologic changes; it may lead people to practice faulty health behaviours; it may produce illness behaviour but no underlying pathology or it may be associated with illness via other factors in a presently undetermined manner.

Complementing the research on trait of negative affectivity and disease is the increasing focus on the potentially protective role of positive emotional states. Chief among these are optimism and perceived control. Optimists appear to experience fewer physical symptoms (Scheier and Carver, 1985), and they may show faster or better recoveries from certain illnesses (Scheier et al., 1986). Beliefs in personal control or self-efficacy appear to affect the likelihood of developing illness both by directly influencing the practice of health behaviours (Allred and Smith, 1989) and by buffering individuals against the adverse effects of stress (Cohen and Edwards, 1989). The relation of these positive states to negative affectivity also merits consideration (Smith et al, 1989).
Neuroticism is a pervasive dimension of normal personality that encompasses a tendency to experience negative emotions and to be highly self-conscious and somatically concerned (Costa and McCrae, 1992). Neuroticism has been associated with negative test results among patients referred for coronary angiography (Barefoot et al., 1992).

Researchers in other contexts have suggested high neuroticism individuals are likely to present an exaggerated symptom profile to their physicians. On self-report measures, high-neuroticism individuals reported suffering from more symptoms, interpreted their symptoms as more severe, and expressed more general affective distress than low-neuroticism individuals (Watson and Pennebaker, 1989). Although high-neuroticism individuals may suffer more illness (Smith and Gallo), it is generally agreed that neuroticism has the potential to inflate health complaints (Watson and Pennebaker, 1989; Ellington et al., 1999).

Studies have investigated the role of personality in gastrointestinal disorders. Lack of competence is associated with childhood emotional disorders (Bleichman et al., 1985), and there is evidence that individuals who perceive themselves as inadequate may adopt the sick role as a means of legitimizing their social failures (Cole and Lejeune, 1972). Children with recurrent abdominal pain have been described as having difficulty in peer relations (Robinson et al., 1990) and in coping with "the ordinary difficulties of life" (Apley and Naish, 1958). Thus, it was predicted that recurrent abdominal pain patients would be characterized by lower levels of competence than well children or patients with organic illness.

Psychological investigations have revealed that children with recurrent abdominal pain are described as anxious, shy, perfectionist children who worry excessively, and have appetite difficulties (Apley and Naish, 1958; Rubin et al., 1967; Stone and Barbero, 1970).

Prior investigators have found that in adults, the relation between stressors and health outcomes was stronger for individuals low in self-esteem.
(DeLongis et al., 1988), lacking social support (Caspi et al., 1987), or with high levels of neuroticism (Bolger and Schilling, 1991) — a construct closely related to trait negative affectivity (NA) Watson and Clark (1984). Children presenting with constipation have lower quality and exhibit poorer self esteem and often some social withdrawal (Landman et al., 1986).

Walker et al. (2001) reported that children with recurrent abdominal pain, trait negative affectivity significantly moderated the relation between stressors and symptoms. Specifically, higher levels of trait negative affectivity significantly predicted a stronger relation between daily stressors and somatic symptoms for children with recurrent abdominal pain.

Role of personality in asthma has also been studied. Barendregt (1957) compared twenty male hospitalized asthmatics with a group of ulcer patients on the Rorschach test. He found that asthmatics have more themes of oppression, hostility, and impulsive behaviour than ulcer patients. But Ring (1957) reasoned “If personality patterns and specific illnesses were associated, patients with one illness should be distinguished from those with another by personality study alone”. On the basis of his studies, he classified some illness groups as excessive reactors emotionally and others as deficient reactors; asthmatics were restrained reactors.

Neuhaus (1958) contrasted 34 asthmatic children and 25 of their siblings with three other groups i.e., 34 children with cardiac illness and 24 siblings, and 68 matched normal controls. Tests used were the Rorschach and Brown Personality Inventory. Based on test interpretations, the asthmatics were reported to be more neurotic, insecure, and dependent than the normal children. However, they did not differ from children with cardiac illness or their siblings. The author concluded that there was no distinctive personality pattern for asthmatics, many previously reported psychological findings might be attributable to the experience of chronic illness.

Groan (1979) reported that the traits or behaviour patterns which constitute the “allergic personality core” are not in themselves specific in fact...
each trait can also be found in patients with other psychosomatic disorders or in psychoneurotic individuals. However, it is the combination in a certain quantitative proportion, which gives the allergic personality its specific nature. Based on research reports and clinical experience, it has been suggested that allergic disorders occur predominantly among persons who share with each other a certain common "core" of neurotic behaviour patterns in their personality structure, by which they distinguish themselves from healthy individual and from patients with other diseases. He also found that the origin of this personality "core" is considered to be partly inborn and heredity, partly a result of a situation in which a combination of rejection and overprotection, designated as a "loving tyranny" on the part of the mother, played an important role (Groen, 1979).

Ramachandran et al. (1974) observed that on Maudsley Medical Questionnaire, significantly higher number of patients in asthma group gave neurotic responses as compared to pulmonary tuberculosis patients. On Cornell Medical Index also significantly higher number of patients in asthma group was found to exhibit disturbances in moods and feelings.

Bengtson (1984) puts forth his views as, "Bronchial asthma was earlier regarded as a nervous disease. Later on, it was defined as an immunological disorder, but today asthma is regarded as a disease with a multifactorial etiology." Many different trigger factors have been demonstrated and in addition to allergies, infections, biochemical and hormonal factors, psychosocial factors are also suspected to be initiating mechanisms. Even though it may be objected that there are of course, many persons who have conflicts and personalities similar to those described here but do not suffer from allergic disorders. To account for the somatic manifestations of allergic patients, one must assume that they are constitutionally predisposed to the disorders which they develop and that specific psychodynamics are operative in them which do not exist in those, who despite a similar conflict constellation enjoy perfect health or suffer from different psychosomatic afflictions.
Locus of control is related to health knowledge and Eiser and Eiser (1987) reported that patients with a higher internal locus of control tended to exhibit more knowledge about their conditions than those with an external locus of control. An external health locus of control was associated with greater levels of anxiety and children who experience a disease that is characterized by unpredictability tend to have a greater external locus of control than healthy children or those with a more predictable illness (Moss-Morris and Paterson, 1995; Eiser and Eiser, 1987).

Wamboldt et al. (2000) found among a community sample of adolescents (not selected on the basis of having asthma), those categorized as hyper perceivers (perceiving greater change in symptoms during a bronchoconstriction challenge test relative to their objective lung function change) showed a trend toward higher levels of anxiety and depression. Although these differences were not statistically significant, the fact that the sample consisted of healthy adolescents may have weakened the effects.

Sharma (2002) found that asthmatic adolescents were higher on psychoticism and neuroticism in comparison to the healthy adolescents. According to Lehrer et al. (2002), researchers have proposed that negative emotions are related to heightened symptom perception in asthma. They also reported, of the negative emotions, anxiety in particular has been implicated in asthma, because of the overlap between anxiety disorders, such as panic, and asthma.

Chen et al. (2006) demonstrated that anxiety was associated with symptom perception during times when children’s asthma was more mild (at baseline before worsening asthma was induced by methacholine). These findings held true even after controlling for objective pulmonary function. The findings are consistent with previous findings primarily in adults with asthma that anxiety is associated with heightened perception of symptoms (Martinez-Moragon et al., 2003). In contrast, when asthma was worse (after methacholine challenge), anxiety was unrelated to perceived symptoms. This
suggests that psychological factors such as anxiety affect symptom perception most strongly when symptoms are somewhat ambiguous (e.g., difficult to discern because they are mild). Higher levels of anxiety may result in children with asthma being more likely to interpret mild symptoms more negatively or having a lower threshold for detecting symptoms (Rietveld, 1998), leading to an over perception of symptoms. According to Chen et al. (2006), anxiety was associated with heightened perception of symptoms, particularly during times when asthma was more mild. Severity was associated with blunted symptom perception, particularly after an acute manipulation of lung function. These findings suggest that psychological factors such as anxiety play a role during times when a child’s symptoms are more ambiguous (e.g., during times of mild symptomatology) and that medical variables such as severity play a role in perception of changes in asthma symptomatology.

b). It was hypothesized that high mental health group was expected to score higher on Self Esteem in comparison to low mental health group in all the chronic disease groups.

Tables 3, 4 and 5 reveals means, standard deviations and t-ratios comparing the high mental health group and low mental health group in Total Disease Group, Gastrointestinal Disorder Group and Respiratory Disorder Group respectively. In all the three groups t-ratios emerged significant on Self Esteem [for Total Disease Group (t= 4.79, HMH>LMH); for Gastrointestinal Disorder Group (t= 4.38, HMH>LMH) and for Respiratory Disorder Group (t= 3.11, HMH>LMH)].

A perusal of Analysis of Variance (table 30) revealed that F-ratio for mental health emerged significant for Self Esteem (F=22.34, p< at 0.01).

A perusal of Discriminant Functional Analysis comparing high mental health and low mental health groups in Total Disease Group (table 45a) and Gastrointestinal Disorder group (table 45b) revealed that Self Esteem emerged
as a significant discriminant for Total Disease Group ($\lambda=.67$) and Gastrointestinal Disorder Group ($\lambda=.60$).

Self Esteem did not emerge as significant discriminant in **Discriminant Functional Analysis** comparing high mental health and low mental health groups in case of Respiratory Disorder Group and Skin Disorder Group.

The above findings support the hypothesis that high mental health group would score higher than low mental health group on Self Esteem for the Total Disease Group and Gastrointestinal Disorder Group and Respiratory Disorder Group. However, the hypothesis was not supported for Skin Disorder Group.

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*). Crouch and Straub (*1983*) described basic and functional self-esteem: basic self-esteem refers to the foundation laid in early childhood, and functional self-esteem refers to ongoing evaluation of interactions with others. Adolescence is a crucial stage in building self esteem because of great physical and emotional changes. During this stage, if a child experiences a chronic condition, the maintenance of positive self-esteem is more complicated (*Miller, 1985*). According to Stanwyck (*1983*), self-esteem is at particular risk during adolescence. Adolescents are constantly comparing themselves with their peers and making judgments based on these observations. Youths feel most comfortable when they are just like their friends. For adolescents with asthma, relationships with other people and their perceptions of themselves may change since they must go through treatment regimens and experience hospitalization. Thus, dependence and feelings of being different can affect the development of a positive self-esteem (*Overbaugh and Sawin, 1992*).

**Bednar et al. (1989)** offered an alternative interpersonal perspective suggesting that self-esteem arises when people recognize that they are coping effectively with psychological threats (*MacDonald et al., 2003*) although intrapersonal perspectives are based on the notion that individual’s own self-evaluations are at the root of self-esteem. It has been acknowledged that
other's evaluations of the individual may also play a role. However, the importance of such interpersonal influences diminishes because they are viewed simply as one of the many sources of information from which people derive interpersonal effects on self-esteem. These reflect a maladaptive reliance on the approval of what other people think of the individual which rather should emerge from person judgments of one's worth (May, 1983; MacDonald et al., 2003).

In contrast to these intrapersonal perspectives, other theorists have conceptualized self-esteem explicitly in interpersonal terms. These theorists echo the symbolic interactionists' claim that the self is an inherently social construction that arises in the context of interpersonal relations (Cooley, 1902; Mead, 1932). Interpersonal theorists conclude that peoples' feelings about themselves are, and ought to be, related to how they believe others evaluate them because subjective feelings of self-esteem provide information regarding one's standing in the eyes of the society at large (MacDonald et al., 2003).

Self-esteem has been shown to act as a buffer against stress, anxiety and related depression. High self-esteem plays a pivotal role in providing protection against anxiety, provoked by perceived threats (Roger, 2000). Stress buffering effects of self-esteem have been directly tested in experimental studies that used both psychological and physiological measures of stress. These experiments compared groups who differed in their self-esteem, and the results showed that subject with high self-esteem suffered less distress, performed better on a cognitive task, and showed less physiological arousal in response to laboratory stressors (Roger, 2000).

Weston et al. (1989) included a physical self concept scale in their study to assess the children's sense of physical well-being and found that asthmatics displayed lower self-concepts than, nonasthmatics, but these differences did not reach statistical significance. McQuaid et al. (2000) reported that children with asthma have a higher level of intrinsic airway resistance. Negative stressors, and mood states may be much more likely to
result in significant airway changes in resistance undermining self-confidence in learning to master these situations.

**Jowett and Ryan (1985)** interviewed 100 people with acne, psoriasis or eczema who attended a hospital outpatient clinic. They found that patients' lives had been affected in numerous ways by their skin condition, including low self-esteem, poor relationships, reduced opportunities in finding employment, functional and interpersonal problems in the workplace, increased levels of anxiety, lack of confidence and depression. Eighty per cent of patients indicated that they were embarrassed and self-conscious about their appearance and felt that people were likely to stare at them. They also found that the view of skin disease as a handicap is not often recognized in the general population and people with skin conditions often face trivialization of their distress, which can further exacerbate the intensity or seriousness of feelings associated with their illness (**Jowett and Ryan, 1985**).

**Cash (1986; 1990)** argued that body image is closely related to self concept, the development of which may be influenced by how positively or negatively we think others appraise us, "the looking glass self". It may be further influenced by the demands placed on the individual by their social and cultural environment. Subjective evaluations of how well a person's appearance conforms to these demands can significantly affect self-esteem and body image (**Butters and Cash, 1987**). Therefore, the skin condition may not have to be severe for the individual to negatively evaluate their ability to conform to social standards. These social demands can be physical (i.e. being able to play water sports in the sun without fear of severely burning depigmented skin lesions) or prevailing cultural beliefs and attitudes (i.e. that a tan in the summer looks attractive and healthy, and that pale skin is unattractive) (**Cash and Pruzinsky, 1990**).

To a large extent, therefore, satisfaction with one's body is derived from one's beliefs about how other people perceive us. In their extensive review on body image research, **Cash and Pruzinsky (1990)** suggest that people often
focus on only the ‘unattractive’ aspects of their appearance and body image satisfaction are often based just on those features that the person is unhappy with. They further note that people who are unhappy with their appearance tend to see their bodies as aesthetic objects and minimize their body’s utility as a functional instrument.

The relevance of self-esteem as it relates to psychodermatology lies in the fact that firstly, it is associated with body image, which is often disturbed with the onset of a skin disease and secondly, with the way that self-esteem is implicated in how patients cope with their condition. It has been found that people who have positive self concepts are more able to cope with both the reactions of others to their appearance and their own feelings about their altered appearance (Cash and Pruzinsky, 1990). From a cognitive perspective, if a person has developed a strong positive self concept then negative or ambiguous social reactions will be less likely to be internalized, and in turn, the psychological effects of these will be less negative (Lanigan and Cotterill, 1989). According to Porter et al. (1990), the stigmatization experienced by people with skin diseases may be the same as, or even more severe, than that experienced by people with other body afflictions. The social and emotional impact of a skin condition can be considerable. The feeling of being stigmatized or being different from others is a common reaction and may affect a person’s interpersonal and social behaviour (Bradbury, 1996; Lansdown, 1997).

Stress, Ways of Coping, Mental Health and Chronic Illness

a) It was hypothesized that high mental health group was expected to score lower on Measures of Stress viz. Stressfulness of Life Events and Stress Symptoms in comparison to low mental health group in all the chronic disease groups.

Table 3 reveals means, standard deviations and t-ratios comparing the high mental health group (HMH) and low mental health group (LMH) in Total
Discussion

Disease Group. t-ratio emerged significant on Stressful Life Events in Past 1 yr (t= 2.55, HMH<LMH).

Table 4 reveals means, standard deviations and t-ratios comparing the high mental health group (HMH) and low mental health group (LMH) in Gastrointestinal Disorder Group. t-ratio emerged significant on Stress Symptoms (t= 2.58, HMH<LMH).

t-ratios comparing the high mental health and low mental health groups in Respiratory Disorder Group and Skin Disorder Group did not emerge significant for Measures of Stress viz. Stressfulness of Life Events and Stress Symptoms.

A perusal of Analysis of Variance for Stress measures viz. Stressfulness of Life Events and Stress Symptoms revealed that F-ratios for mental health did not emerge significant.

A perusal of Discriminant Functional Analysis comparing high mental health and low mental health groups in Respiratory Disorder Group (table 45c) revealed that Stress Symptoms (λ=.67) emerged as significant discriminant.

Stressfulness of Life Events and Stress Symptoms did not emerge as significant discriminants in Discriminant Functional Analysis comparing high and low mental health groups in case of Total Disease Group, Gastrointestinal Disorder Group and Skin Disorder Group.

Above findings, support the hypothesis on Stressfulness of life events in past one year for Total Disease Group, for Stress symptoms on Gastrointestinal Disorder Group. However the Hypothesis is not supported for Skin Disorder Group and Respiratory Disorder Group.

b) It was hypothesized that high mental health group was expected to score higher on Problem Focused Coping Styles viz. Planful Problem Solving, Seeking Social Support, Accepting Responsibility and Confrontive Coping in comparison to low mental health group in all the chronic disease groups. It was also hypothesized that high mental health group
Discussion

was expected to score lower on Emotion focused Coping styles viz. Distancing, Self Control, Escape Avoidance, and Positive Reappraisal in comparison to low mental health group in all the chronic disease groups.

Table 3 reveals means, standard deviations and t-ratios comparing the high mental health group (HMH) and low mental health group (LMH) in Total Disease Group. t-ratio emerged significant on Escape Avoidance (t= 2.56, HMH<LMH).

Table 4 reveals means, standard deviations and t-ratios comparing the high mental health group (HMH) and low mental health group (LMH) in Gastrointestinal Disorder Group. t-ratio emerged significant on Positive Reappraisal (t= 3.28, HMH>LMH).

Table 5 reveals means, standard deviations and t-ratios comparing the high mental health group (HMH) and low mental health group (LMH) in Respiratory Disorder Group. t-ratio emerged significant on Escape Avoidance (t= 2.29, HMH<LMH).

Table 6 reveals means, standard deviations and t-ratios comparing the high mental health group (HMH) and low mental health group (LMH) in Skin Disorder. t-ratio emerged significant on Confrontive Coping (t= 2.31, HMH<LMH).

A perusal of Analysis of Variance (table 23) revealed that F-ratio for mental Health emerged significant for Escape Avoidance (F=6.93, p< at 0.01).

A perusal of Discriminant Functional Analysis comparing high mental health group and low mental health group in Gastrointestinal Disorder Group (table 45b) revealed that Positive Reappraisal (λ=.66); Escape Avoidance (λ=.55) and Planful Problem solving (λ=.52) emerged as significant discriminants.

Ways of Coping did not emerge as significant discriminant in Discriminant Functional Analysis comparing high and low mental health
groups in case of Total Disease Group, Respiratory Disorder Group and Skin Disorder Group.

Above Findings, support the hypothesis for some coping dimensions in some chronic disease groups.

Research reveals that stresses associated with being chronically ill can be grouped as those that are common to most diseases, those specific to certain illness, and those due to conflict between illness demands and those of normal development asks. Stresses associated with most diseases include the intrusiveness of diseases symptoms and their integration into daily life. Other issues include restrictions and limitations on activities as well as having to perform medical care tasks in front of peers. Competing illness and developmental demands often occur for school aged children and adolescents especially in the context of school and peers (Gatchel and Oordt, 2003).

To explain the relationship between chronic stress and compromised health, Sterling and Eyer (1988) proposed the concept of allostasis. Allostasis refers to the body’s ability to adapt and adjust to environmental demands by matching the demands of the environment with physiological responses. For example, human blood pressure fluctuates throughout the day in response to environmental demands (e.g. increasing during a morning job and decreasing during an afternoon nap). To coordinate an efficient response to environmental demands, central nervous system control is essential to allow an organism to prepare for and maintain the physiological level of arousal needed to respond to demands and then to adjust these levels downward when the stress diminishes. Given the costs of physiological arousal, organisms under going chronic stress and chronic arousal may experience depleted physiological resources. McEwen and Stellar (1993) defined this physiologically compromised state as "the strain on the body produced by repeated ups and downs of physiological response as well as by the elevated activity of physiologic systems under challenge, and the changes in metabolism and the impact of wear and tear on a number of organs and tissues, (that can
predispose the organism to disease". According to McEwen and Stellar (1993), if the stress is chronic and intense, there is more strain on the internal system than if the stress is episodic. In summary, allostasis allows an organism to adapt to chronic stress by supporting a prolonged state of physiological arousal, but such prolonged strain on the system can result in physical and psychological damage.

Attar et al. (1994) found that the presence of one type of stressor alone was not sufficient to lead to significant maladjustment; exposure to a combination of stressors was necessary for children to develop serious emotional and behavioural problems. Masten et al. (1993) confirmed that it is the cumulative risk status of children, with both chronic stress and the recent onset of negative life events (NLEs) that is a powerful predictor of child behaviour problems.

Many social-cognitive variables have been associated with indicators of behavioural health and with the adjustment and recovery of individuals facing health-related problems, and these characteristics are important factors in providing interventions (Auerbach, 1989). Therefore, it is important to consider the relations between social problem-solving abilities and indicators of behavioural health. According to the Elliott et al. (1991), social problem-solving abilities may be best conceptualized in terms of two major components: problem orientation and problem-solving skills. Before 1991 there were few studies concerning the relationship of social problem solving to physical health, generally, and no published studies of social problem solving and adjustment among individuals with health related problems, specifically. Elliot’s was the the first study that examined this issue, found that individuals who had incurred a spinal cord injury (SCI) and who varied tremendously in the amount of time since the onset of the injury (1 to 490 months) were more likely to report greater depression and psychosocial disability if they had more negative appraisals of their problem-solving abilities. Elliot et al.(1991) also reported from there study that the relationship of social problem-solving abilities to both adjustment measures was not mediated by either the severity of the disability.
Discussion

or the duration of the condition; the degree of handicap associated with the injury was related to social problem-solving abilities and beyond the variance attributable to the actual condition, and elements of the problem orientation component were significantly associated with the self-report measures of adjustment. This provided the first evidence that social problem-solving abilities may operate in a theoretically consistent fashion among people with acute and chronic health problems and that the problem orientation component may influence the development of distress associated with health.

Social problem-solving ability operates as a metacognitive construct, influencing the way an individual perceives, processes, and uses 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 ineffective problem solvers reported significantly more physical symptoms in the three week 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 behavioural and social mechanisms that either prevent or facilitate the development of these conditions.
A number of specific coping strategies, and subsequent attempts at adjustment to chronic illnesses, have been examined in the clinical research literature. Issues related to coping with chronic and terminal illness are reviewed (Gatchel and Oordt, 2003).

Coping and Adjustment Issues Related to Chronic or Terminal Illness as reported by Gatchel and Oordt (2003) are:

- **Perceived lack of control and helplessness**: Consistent clinical research has demonstrated that a perceived lack of control over important events, and the resultant feelings of helplessness, is a potent stressor and results in reduced motivation and emotional distress such as anxiety and depression. It also negatively affects health outcomes.

- **Catastrophizing**: Related to helplessness, this is defined as one’s use of excessive and exaggerated negative self-statements when faced with negative events (such as a chronic illness). Catastrophizing has been associated with higher levels of psychosocial distress and dysfunction, poorer physical functioning and disability, frequent reports of pain interference in daily activities, and lower levels of general activity.

- **Hardiness**: This is a very different coping style compared to the previous two. Hardiness refers to the belief that one has control over what happens to oneself, a strong sense of purpose or commitment to achieve a particular goal, and an enduring “zest” for challenge.

- **Optimism**: This reflects a fundamental bias to view the world as benign and controllable, and a general expectation of positive outcomes. It is related to perceived control and self-efficacy, and has also been associated with more positive health outcomes.

- **Hope**: Many individuals use prayer as a method to help them overcome poor health and suffering or to have a positive response such as “I have faith in my doctors to cure my illness.” Unfortunately, these passive
coping methods have not been found to be very adaptive in helping to adjust and deal with chronic illnesses, such as chronic pain.

- **Distraction/diverting attention:** The ability to regularly engage in distracting activities allows less time for individuals to overly ruminate or catastrophize about their chronic illnesses. This type of coping results in a more positive mood. Moreover, it increases the probability of more interaction with others, thus enhancing the positive effects of social support.

- **Positive coping self-statements:** Numerous studies have found that positive self statements are often associated with more adaptive functioning in the face of adversity. Many cognitive–behavioural treatment techniques include training in positive self-statements as an integral component of the overall treatment strategy.

Many studies report close relationship between stress and gastrointestinal disorders. Environmental stressors and related changes in mood alter the function of the gastrointestinal tract and gastrointestinal symptom perception in persons with gastrointestinal diseases such as gastroesophageal reflux disease and those with functional gastrointestinal disorders. The relationship of stressors to gastrointestinal function is viewed as a direct consequence of the bidirectional modulation of gastrointestinal function by the central nervous system, including motor responses, pain modulation, and even immune function (Mulak et al, 2004). These interactive relationships are important for functional gastrointestinal disorders in that they provide the foundation for hypotheses of central nervous system dysregulation as causative in functional gastrointestinal disorders symptom onset and maintenance (Tache et al., 2001).

Although clinical literature has suggested that recurrent abdominal pain may be a reaction to stress (Apley, 1975), empirical evidence linking recurrent abdominal pain to stress is mixed, with one exception. Hodges et al. (1984)'s cross-sectional investigations have found no difference in levels of negative life
events among patients with recurrent abdominal pain compared with other patient groups (Walker et al., 1993). In two prospective studies, however, maternal reports of family negative life events predicted children's symptom maintenance following medical evaluation for recurrent abdominal pain (Walker et al., 1994). Emotional components like stressful life events, school phobia, sibling rivalry, etc, have been attributed as underlying components in non-organic recurrent abdominal pain (Apley and Naish, 1958; Dutta et al., 1999). Negative life events have been linked to a wide range of adverse child outcomes, including functional complaints, acute physical illness, and emotional disorders (Johnson, 1986). Some researchers have suggested that children with recurrent abdominal pain might react to stress with somatic rather than emotional symptoms (Shapiro and Rosenfeld, 1987), which would potentially lead to a weaker relation between stress and emotional symptoms in children with recurrent abdominal pain than in well children.

Severe life stress has also been associated with functional gastrointestinal disorders (Creed et al., 1988) in the attempt to establish some control over their symptoms, many patients with functional gastrointestinal disorders use social stress as an explanation for exacerbation of symptoms and treatment seeking.

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).

Walker et al. (2001) reported that compared to healthy children, children with recurrent abdominal pain reported somatic symptoms (e.g., headaches, fatigue) at all times of day. Children with recurrent abdominal pain reported significantly more daily stressors than did well children, and there was
Discussion

a trend for children with recurrent abdominal pain to rate their stressors as more severe compared with healthy children. The fact that a standard list of stressors was presented to each child suggests that children with recurrent abdominal pain may indeed have experienced more of these stressors than their peers had. However, it could also be possible that children with recurrent abdominal pain were simply more attuned to these events and therefore more likely to endorse them, whereas their peers may have experienced similar events but quickly forgotten about them. Both children with recurrent abdominal pain and well children reported significantly more stressors during school than they reported before or after school. Thus, the experience of stress at school did not differentiate children with recurrent abdominal pain from other children. Rather, the somatic nature of their reaction to stressors at school and elsewhere appears to be the factor that differentiates children with recurrent abdominal pain from others.

According to Parkman et al. (2006), in healthy controls, strong emotions or environmental stress can lead to increased motility in the oesophagus, stomach, small intestine, and colon. The functional gastrointestinal disorders, however, are characterized by having an even greater motility response to stressors (psychological or physiological) when compared to normal subjects. Drossman (2006) reported that these motor responses are partially correlated with bowel symptoms, particularly vomiting, diarrhea and constipation, but are not sufficient to explain reports of chronic or recurrent abdominal pain.

Stress and asthma are also interlinked. The argument that psychological stress influences autonomic control of the airways is based primarily on the fact that many of the same autonomic mechanisms thought to play a role in asthma are involved in the activation and regulation of physiological responses to stress. These mechanisms include the release of sympathetic nervous system mediators and the action of adrenergic (sympathetic) and cholinergic (parasympathetic) nerves, and the neurotransmitters and neuropeptic) nerves,
Discussion

and the neurotransmitters and neuropeptides they produce (Barnes et al., 1998).

A focus on the inflammation of the airways in asthma has drawn attention to the possibility that stress induced alterations in immune response have implications for development, exacerbation, and triggering of asthma (Busse et al., 1995; Cohen et al., 1998). A substantial literature demonstrating that psychological stress can influence cell trafficking, cell function including mitogen stimulated blastogenesis and natural killer cell cytotoxicity, and lymphocyte production of cytokines has been recently reviewed (Herbert and Cohen, 1993). Stress can modulate immune response through nerve pathways connecting the autonomic nervous and immune systems, by triggering the release of hormones and neuropeptides that interact with immune cells, and through the impact on behaviours such as smoking and through the impact on behaviours such as smoking and drinking alcohol that are adopted as ways of coping with stress (Cohen et al., 1996). The strongest suggestion from the current literature is that psychological stress may influence the pathophysiology of asthma by increasing the risk of respiratory infections. The role of respiratory tract infection in asthma is fairly well characterized with current evidence indicating that viral, as opposed to bacterial, infections are the most important infectious agents (Busse et al., 1997). Viral respiratory infections may also result in the appearance of a late asthmatic response to inhaled antigen (Weiss et al., 1995). Thus, there is evidence that viral infections are an “adjuvant” to the inflammatory response and promote the development of airway injury by enhancing airway inflammation.

A potential consequence of stress induced changes in immune response is suppression of host resistance to infections agents, particularly agents that cause upper respiratory disease. Using this paradigm, psychological stress has been associated with the incidence of infection and illness (Stone et al., 1992; Cohen et al., 1998).
Primarily, children with asthma are like other children, who go to school, play with friends, and have to do homework. Within this normal context, children with asthma are confronted with additional stress related to their asthma. Various researchers have suggested that children with asthma experience much stress at school, because of their higher rates of school absenteeism (Celano et al., 1990; Gizyankski et al., 1990; Bender, 1995) and feeling left out as a result of not being able to participate in some sports (Celano et al., 1990; Colland, 1988). A study among 365 mothers of chronically ill children (of which 28% had asthma) showed that 35% believed that their child was subject to discrimination, of which 55% was related to school, and 36% to peers (Turner-Henson et al., 1994). Passive response to stress or embarrassment appears to trigger clinically significant bronchoconstriction in 20–40% of asthma patients (Isenberg et al., 1992).

Sharma (2002) reported that asthmatic adolescents were higher on stress in comparison to healthy adolescents. A study conducted by Berntsson et al. (2003) reported that patients with asthma-like symptoms used planful problem solving, seeking social support and self controlling coping strategies. They also found that Asthma-like patients often have few strategies for coping with their symptoms and life situation.

As regards stress and Skin disorders, research in psychosomatic dermatology has followed many pathways, with stress being a major topic among investigators interested in environmental and psychosocial influences on the skin (Picardi et al., 2001). Three broad traditions can be distinguished in research on stress. The environmental tradition focuses on environmental events or experiences that are commonly associated with considerable adaptive demands. With an emphasis on the ‘objective’ stressfulness of such events. The psychological tradition focuses on individuals’ subjective evaluations of their abilities to cope with the demands posed by specific events of experiences, with an emphasis on perceived stressfulness of such events. The biological tradition focuses on the activation of certain physiological systems in response to both psychologically and physically demanding
situations, with an emphasis on the mechanisms by which environmental demands may be translated into biological changes in the body (Cohen et al., 1995).

Niemer et al. (1998) in their study investigated how patients with acne vulgaris cope with their disease. By means of questionnaires, relations and interactions between acne and psyche were evaluated. In addition to the evaluation of a specific questionnaire for patients with chronic skin disorders (CSD), assessing psychosocial impairment by the disease, depression and social anxiety were investigated in patients with acne. The chronic skin disorders showed significant correlations with Beck’s depression inventory, the interaction-anxiety questionnaire and the health locus of control scale. The chronic skin disorders revealed significant differences compared to a control group of 33 patients with healthy skin. The results of the study demonstrated that patients with acne suffer from emotional distress and psychosocial problems caused by their disease; however, impairment is not correlated with the objective severity of acne.

Studies of the role of stress in dermatological diseases have usually focused on discrete life events. With only a few studies investigating daily hassles or chronic stress situations (Picardi et al., 2001).

According to Rechardt et al. (1991), anecdotal reports of an association between exceptional life situations and relapse of atopic dermatitis continued to appear in the literature until recently, substantial percentages of patients from large case series also reported that stress influenced the course of their illness. In a large sample of 801 patients studied in a dermatology clinic during their teens and then followed up at the ages of 22-41, psychological stress was experienced as a major aggravating factor in one half to two thirds of patients (Kodama et al., 1999).

Another follow-up study of childhood atopic dermatitis reported that 59% of 101 patients noticed a connection between psychic stress and the exacerbation of their skin conditions or a new attack of the dermatosis.
(Kissling et al., 1993). Despite being suggestive of a relationship between stressful events and the course of the disease, these studies do not provide clear evidence of the hypothesized relationship, given their lack of a control group and their reliance on patient's opinions. Atopic dermatitis patients show higher levels of anxiety, excitability and depression problems in dealing with anger and hostility and inadequate stress coping (Scheich et al., 1993).

Buske Kirschbaum et al. (1997) found in their study that atopic dermatitis patients tend to interpret the confrontation with a potentially threatening situation in a different way than the healthy controls. Many dermatologists think that stress plays an important part in acne (Dahan et al., 1998) and patients with acne also believe that psychological stress is at least partially connected with the disease (Niemier et al., 1998).

Clinical wisdom strongly suggests that psychological factors play a role in triggering or exacerbating dermatological diseases, and there is little doubt that in some cases emotional stress does act as precipitating factor in bringing on or worsening various skin diseases. According to Carpoore et al. (1998), the role of psychological stress does act as a precipitating factor in bringing on or worsening various skin diseases. The role of psychological stress might be of particular relevance in patients affected by chronic or intractable skin conditions, as suggested by a recent study in which 69% of 64 patients with a chronic or treatment-refractory dermatological condition reported that a significant life event occurred at or about the time of onset of the skin condition.

Picardi et al. (2001) clearly illustrated the reciprocal relationship between psychological distress and skin condition. However, its correlational nature does not assess whether skin disease related stress influences symptom severity or whether individuals with severer symptoms are apt to experience more distressing events or are more distressed although one can speculate that the association probably operates in both directions. Picardi and his co-workers did not find evidence of an association between major life
events and severity of symptoms. However, its results did not rule out the possibility of stressful events acting as a triggering or exacerbating factor.

There is no simple model, however, that accounts for why some people adjust well to the challenges of skin disease while others do not. However, there is evidence to suggest that equipping people with efficacious problem-focused and emotion-focused coping tools can positively affect their ability to deal with their condition, which in turn affects psychological variables such as self-esteem and body image (Papadopoulos et al., 1999).

Chiu et al. (2007) reported that changes in acne severity correlated highly with increasing stress, suggesting that emotional stress from external sources may have a significant influence on acne.

**Perceived Social Support, Perceived Parental Bonding Dimensions, Family Environment, Mental Health and Chronic Illness**

a) It was hypothesized that high mental health group was expected to score higher on Perceived Social Support in comparison to low mental health group in all the chronic disease groups.

Table 3 reveals means, standard deviations and t-ratios comparing high mental health group (HMH) and low mental health group (LMH) in Total Disorder Group. t-ratio emerged significant on Perceived Social Support (t= 4.08, HMH>LMH).

Table 5 reveals means, standard deviations and t-ratios comparing the high mental health group (HMH) and low mental health group (LMH) in Respiratory Disorder Group. The following t-ratio emerged significant on Perceived Social Support (t= 4.39, HMH>LMH).

**t-ratios** comparing the high mental health and low mental health groups in Gastrointestinal Disorder Group and Skin Disorder Group did not emerge significant for Perceived Social Support.
A perusal of **Analysis of Variance** (table 12) revealed that F-ratio for mental health emerged significant for Perceived Social Support ($F = 16.54$, $p < 0.01$).

A perusal of **Discriminant Functional Analysis** comparing high mental health and low mental health groups in Total Disease Group (table 45a) revealed that Perceived Social Support ($\lambda = 0.67$) emerged as significant discriminant.

A perusal of **Discriminant Functional Analysis** comparing high mental health and low mental health groups in Respiratory Disorder Group (table 45c) revealed that Perceived Social Support ($\lambda = 0.74$) emerged as significant discriminant.

Perceived Social Support did not emerge as significant discriminant in **Discriminant Functional Analysis** comparing high mental health group and low mental health groups in case of Gastrointestinal Disorder Group and Skin Disorder Group.

*The hypothesis for Perceived Social Support was upheld for Total Disease Group and Respiratory Disorder Group.*

b) *It was hypothesized that high mental health group was expected to score higher on Perceived Parental Care in comparison to low mental health group in all the chronic disease groups. It was also hypothesized that high mental health group was expected to score lower on Perceived Parental Over Protection in comparison to low mental health group in all the chronic disease groups.*

Table 3 reveals means, standard deviations and **t-ratios** comparing the high mental health group (HMH) and low mental health group (LMH) in Total Disease Group. t-ratio emerged significant for Perceived Parental Over Protection ($t = 2.75$, HMH<LMH).

**t-ratios** comparing the high mental health and low mental health groups in Gastrointestinal Disorder Group, Respiratory Disorder Group and Skin
Discussion

Disorder Group did not emerge significant for Perceived Parental Bonding dimensions.

A perusal of Analysis of Variance (tables 14, 15) revealed that F-ratios for mental health emerged significant for Perceived Parental Care (F= 5.74, p< at 0.05) and Perceived Over Protection (F=6.15, p< at 0.05).

Perceived Parental Bonding dimensions did not emerge as significant discriminants in Discriminant Functional Analysis comparing high mental health and low mental health groups in case of Total Disease Group, Gastrointestinal Disorder, Respiratory Disorder Group and Skin Disorder Group.

The findings of the present study uphold the hypothesis partially only.

Ecological views on health promotion underscore the significance of the social context within which individuals live and the importance of social relationships (Stokols, 1992.) In the study of social relationships and health, the former has been conceptualized in terms of social networks (a person centred web of social relationships) and social support (a measure of the functional content of these relationships). Lack of social relationships has been linked to an array of adverse health outcomes (House et al., 1988) and physiological effects including altered immunological functioning (Busse et al., 1995). Social support may reduce or buffer the deleterious effects of stress by altering the perception of a situation or facilitating the perception of a situation or facilitating more appropriate coping (Cohen, 1992). Greater social network diversity has been related to less logical distress (Cohen and Syme, 1985) Social support may operate through influence on health promoting behaviours such as abstaining from cigarette smoking, moderating alcohol consumption, improving diet, exercise, and sleep quality (Cohen, 1988). On the other hand, social support can be deleterious as well. For example, support that encourages dependency may not have a positive impact (Wortman et al., 1985). Parental attitudes that reflect exaggerated concern in protecting the child’s health (McNichol et al., 1973) and overdependency on medical support
(Liebman et al., 1976) have been demonstrated, especially among severe asthmatic subjects.

Emotional-affectional support may be the most helpful type of support, but other types of support are also important. For example, tangible support (financial and physical help), educational support and affirmational support. Without a sense of belonging- affiliational support from family and friends patients can become further isolated and become physically ill again if they retreat into illness. The type of support needed depends on the disease itself, the phase of the disease process (acute, chronic, or resolving), and the individual. It is important to be aware of the type of support needed. It can be completely unsupportive to explore past childhood conflicts when one must instead think about managing illness.

The quality of social support and intimate relationships is generally considered to moderate the harmful effects of stressful circumstances on physical and mental health. Attachment theory, as developed by Bowlby (1969, 1973, 1988) and Ainsworth et al. (1978) offers a theoretical framework for the study of the interrelationships between stress, social support, and health. It proposes that stressful circumstances activate the attachment system, i.e. affect, cognitions, and behaviour aimed at seeking support. Recent research has provided strong support for the attachment perspective on intimate relationships. Secure attachment is associated with trust, relationship satisfaction, and constructive approaches to conflict; avoidant attachment is related to low levels of intimacy, commitment, and care; anxious ambivalent attachment is linked with dependency, relationship conflict, and low relationship satisfaction (Feeney et al., 1994).

Considerable research has also linked the quality of personal relationships with health status. Symptom reporting and illness onset have been linked to social insecurity, disruption of the social environment, and perceived inadequacy of social support (O'Leary, 1990). Furthermore, psychosocial variables such as loneliness and attachment to spouse appear to
mediate the effect of stressors on immune function (Kennedy et al., 1988). The association between health and the quality of personal relationships, together with evidence of the predictive power of attachment measures, suggests that attachment style may have important implications for health behaviour. Such implications are supported by theory relating attachment style to affect regulation. According to attachment theory, attachment styles develop from experiences of regulating distress with attachment figures and reflect rules that, by generalization, guide responses to any distressing situation. Specifically, secure attachment stems from responsive care giving and reflects rules that allow the person to acknowledge distress and turn to others for support; avoidant attachment develops in the face of rejection from caregivers and reflects rules restricting acknowledgement of distress and seeking of support; anxious/ambivalent attachment develops from insensitive or inconsistent care giving and involves hyper vigilance to negative affect (Kobak and Sceery, 1988).

According to Whitehead et al. (1986), research into the precursors of health focuses on early family experiences of illness. Guided by the proposition that social learning experiences during childhood affect the way in which individuals later perceive and respond to somatic sensations, researchers have investigated modeling and reinforcement influences on health behaviours. According to Feeney and Ryan (1994), both social learning and attachment theories point to family influences on responses to distressing internal sensations, the attachment perspective may clarify the pathways by which family variables affect later health. First, sick role behaviour in the family of origin may influence health not only by modeling but also by contributing to attachment style (because prolonged or severe illness in the family is likely to affect the availability and quality of parenting). Second, research into reinforcement of the sick role may be usefully supplemented by broader studies of parental responses to children’s ill health, grounded in attachment theory.
Feeney and Ryan (1994) suggested that subjective and objective health is related to parental modeling of the sick role (assessed by retrospective reports of chronic illness in the family and of parents having cut back on work or other activities when ill) and to parental encouragement of the sick role (assessed by reports of having been given special privileges when feeling unwell as a child). They also reported that existing measures of illness behaviour encouragement do not always distinguish between appropriate and inappropriate care giving (seeking medical advice for the unwell child may generally be appropriate, whereas bringing special treats may be seen as overindulgent and may reinforce illness behaviour). In addition, other parental responses such as rejection may help to explain the under expression of illness behaviour. Thus, studies of the links among specific parental responses to health complaints, attachment style, and later health behaviour may provide a more complete understanding of family influences on health.

Sharma (2002) found that asthmatic adolescents scored lower on perceived social support in comparison to healthy adolescents.

It was hypothesized that high mental health group was expected to score higher on Relationship Dimension and its subscales viz. Expression and Cohesion, and lower on Conflict in comparison to low mental health group in all the chronic disease groups. It was also hypothesized that high mental health group was expected to score higher on Personal growth Dimension and its subscales viz. Independence, Achievement Orientation, Active Recreation Orientation, Intellectual Cultural Orientation, and Moral Religious emphasis in comparison to low mental health group in all chronic disease groups. It was also hypothesized that high mental health Group was expected to score higher on System Maintenance Dimension and its subscales viz. Organization and lower on Control in comparison to low mental health group in all the chronic disease groups.
Discussion

Table 3 reveals means, standard deviations and \textbf{t-ratios} comparing the high mental health group (HMH) and low mental health group (LMH) in Total Disease Group. \textbf{t-ratios} emerged significant on Expression \((t=2.75, \text{HMH}>\text{LMH})\); Personal Growth \((t=2.75, \text{HMH}>\text{LMH})\); Independence \((t=2.03, \text{HMH}>\text{LMH})\); Achievement Orientation \((t=2.53, \text{HMH}>\text{LMH})\); Intellectual Cultural Orientation \((t=2.91, \text{HMH}>\text{LMH})\) and Organization \((t=2.36, \text{HMH}>\text{LMH})\).

Table 4 reveals means, standard deviations and \textbf{t-ratios} comparing the high mental health group (HMH) and low mental health group (LMH) in Gastrointestinal Disorder Group. \textbf{t-ratio} emerged significant on Conflict \((t=2.26, \text{HMH}<\text{LMH})\).

Table 6 reveals means, standard deviations and \textbf{t-ratios} comparing the high mental health group (HMH) and low mental health group (LMH) in Skin Disorder Group. The following \textbf{t-ratios} emerged significant on Personal Growth \((t=2.55, \text{HMH}>\text{LMH})\); Intellectual Cultural Orientation\((t=3.31, \text{HMH}>\text{LMH})\); Active Recreation Orientation \((t=2.86, \text{HMH}>\text{LMH})\) and Organization \((t=2.83, \text{HMH}>\text{LMH})\).

\textbf{t-ratios} comparing the high mental health and low mental health groups in Respiratory Disorder Group did not emerge significant for Family Environment dimensions.

A perusal of \textbf{Analysis of Variance} (tables 32, 36, 37, 39, 40) revealed that F-ratios for mental health emerged significant for Expression \((F=4.37, p<0.05)\), Independence \((F=3.97, p<0.05)\), Achievement Orientation \((F=10.88, p<0.01)\), Intellectual Cultural Orientation \((F=8.17, p<0.01)\), Active Recreation Orientation \((F=6.26, p<0.05)\), Personal Growth \((F=7.32, p<0.01)\), Organization \((F=5.69, p<0.05)\).

A perusal of \textbf{Discriminant Functional Analysis} comparing high mental health and low mental health groups in Total Disease Group (table 45a) revealed that Cohesion \((\lambda=.67)\) and Achievement Orientation \((\lambda=.67)\) emerged as significant discriminants.

291
Discussion

A perusal of Discriminant Functional Analysis comparing high mental health and low mental health groups of Respiratory Disorder Group (table 45c) revealed that Intellectual Cultural Orientation ($\lambda = .54$) emerged as significant discriminant.

A perusal of Discriminant Functional Analysis comparing high mental health and low mental health groups in Skin Disorder Group (table 45d) revealed that Organization ($\lambda = .67$); Cohesion ($\lambda = .65$) and Moral Religious Emphasis ($\lambda = .62$) emerged as significant discriminants.

Family Environment dimensions did not emerge as significant discriminant in Discriminant Functional Analysis comparing high and low mental health groups in case of Gastrointestinal Disorder Group.

The present findings support the hypothesis for many dimensions of family environment.

The family environments of children with a chronic illness assume added importance because daily disease care must be negotiated and managed between parents and children. Nevertheless, most families appear to cope well with the demands of disease management. Holmes et al. (1998) reported that presence of a significant stressor, whether discrete or chronic, exerts a similar impact on externalizing and internalizing behaviour problems, suggesting that neither the type nor duration of stress differentially affects children's behavioural reactions. Stress itself, regardless of its specific features, appears to produce a non-specific, global elevation of behavioural scores. Both positive and negative aspects of the family environment significantly predicted children's externalizing and internalizing behaviour problems, which is consistent with earlier findings (Masten et al., 1988). More cohesive and less conflicted family environments to lower externalizing and internalizing behaviour problem scores. Interestingly, only the positive attribute of family cohesion predicted children's social competence, which was unrelated to conflict scores. Competencies in children, unlike behaviour problems, appear only to be predicted by positive environmental features where such behaviours
are likely to be modeled and rewarded (Masten and Coatsworth, 1998). They also found that despite adversity, some children withstand a chronically stressful environment or a sequence of several negative life events (NLEs) and develop normally. The two most widely studied attributes of resilient children have been their personal traits and their family environments.

A child's adaptation to chronic illness is not an isolated process; family members, health care professionals, and the community have an influential impact. In particular, families play a pivotal role in the management of a child's illness. Many parents of children with chronic health conditions have described their family environment, marital satisfaction, and level of family conflict as similar to that of families of healthy children, indicating considerable hardiness or resilience (Noll et al., 1995; Quittner et al., 1998). Fathers of children with chronic illnesses consistently function as well as fathers of healthy controls on multiple psychological indices (Quittner et al., 1998). Compared to siblings of healthy children, siblings of children with chronic illnesses also fare well (Noll et al., 1995). Importantly, hardy or resilient paths of functioning in families can persist over the long term (Kupst et al., 1995).

Enhanced functioning has been noted among families who report more positive family attitudes and increased closeness following a child's illness (Sargent et al., 1995). Siblings of children with a chronic illness have exhibited fewer behaviour problems and a range of positive qualities, such as increased caring, maturity, and helpfulness (Sargent et al., 1995). Risk for maladaptive or declining paths may be greater among mothers of children with chronic illness than fathers and siblings, presumably because mothers often manage the day-to-day care of children. Some mothers have reported adjustment problems, such as anxiety and depression (Wallander and Varni, 1998), but only a small subgroup experience severe emotional distress. Parental and child functioning also may influence one another, such that decline in one part of the system (e.g., the parents) may lead to less adaptive child functioning. However, dysfunction is not universal across illnesses, and a broad range of outcomes has been reported.
Discussion

It appears that a single family member, typically the mother, can buffer the negative effects of a chronic illness and promote child adaptation through attentive caregiving (Drotar, 1997). However, additional support or respite may be needed to promote the adjustment of overburdened mothers. Family adaptability and cohesion are two additional factors linked to adjustment. In general, greater adaptability (i.e., flexibility or ability to change) and greater cohesion (i.e., emotional connection) are associated with positive functioning in families. However, for families of children with chronic illness, these relationships may not be consistent. For example, greater adaptability and cohesion have been found to be associated with fewer emotional and behaviour problems among siblings of children with cancer (Horowitz and Kazak, 1990).

According to McNelis and colleagues (2000), for children with chronic illness, the family environment is likely to serve “either as a buffer to reduce the effects of the stressors or as a contributor to the disruption caused by the disease process”. The family environment also is significant for the development of positive self-concept in children with chronic illness (Miller and Wood, 1991).

The relationship of family functioning to learned resourcefulness has not been explored. However, Kliewer and Lewis (1995) studied the coping processes of children and adolescents with sickle cell disease and found that children’s active coping was correlated with a cohesive family environment.

Lohman and Jarvis (2000) examined the relationship between adolescents’ methods of coping with stress and the dynamics of their family. Their study found that family cohesion affected the adolescents’ active coping while family conflict affected their avoidant coping. In Chinese adolescents, Shek (2002) found that family functioning was significantly related to existential well-being, self-esteem, and sense of mastery. In addition, Mandara and Murray (2000) found that family functioning was a strong predictor of self-esteem in African American adolescents.
According to Malhotra and Singh (2002), in an Indian setup family influence on adolescents is continuing to change in some ways it is growing stronger, in some ways 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. 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. Preechawong et al. (2007) reported that studies have shown that the interaction of family members with a chronically ill child may enhance or hinder the child’s psychosocial development.

The beginning of pain episodes in patients with recurrent abdominal pain, can be related to psychological stressors in the family or at school in most of these children (Apley and Naish, 1958; Rubin et al., 1967; Stone and Barbero, 1970). Recurrent abdominal pain in childhood is more common in families with high rates of reported physical illness (Apley and Naish, 1958; Walker et al., 1994; Hotopf et al., 1998).

According to Woodward et al., 1988 one may not distinguish parents of children presenting at the clinic with unexplained pain from parents of children presenting with organic illness. Social learning processes have been suggested as playing a role in the development of recurrent pain syndromes (Fordyce, 1978). For example, modeling appears to be important in the development of patterns of pain behaviour (Craig, 1978). Recent studies have found that frequent or unexplained child pain is more common when other family members exhibit pain behaviour (Osborne et al., 1989). The family modeling perspective also is consistent with studies that have reported a higher incidence of abdominal disorders in family members of recurrent
abdominal pain patients than well children (Wasserman et al., 1988), and a significant positive correlation between parents’ and children’s somatization scores in families of recurrent abdominal pain patients, but not in families of organic or well patients (Walker et al., 1991). Finally, operant learning also is hypothesized to play a role in the development and maintenance of recurrent pain in children (McGrath, 1987). Positive consequences of pain (Osborne et al., 1989) and parental discouragement of adaptive coping behaviour (Dunn-Geier et al., 1986).

Dutta et al. (1999) reported that patients with non organic recurrent abdominal pain were living in a different psychosocial environment at school and home compared with the control group. They also found that their environments were more stressful in comparison to the control patients. Similar findings have been reported by (Apley, 1958; Liebman, 1978).

The aggregation of functional gastrointestinal disorders in families is not only genetic (Lock et al., 2000). What children learn from parents may contribute to the risk of developing an functional gastrointestinal disorders and also children of irritable bowel syndrome parents make more health care visits (and incur more health care costs) than the children of non-irritable bowel syndrome parents (Levy et al., 2001). According to Levy et al. (2004), Retrospective and prospective studies have shown that children whose mothers reinforce illness behaviours experience more severe stomach-aches and miss more school than other children. Additional research supporting this mechanism comes from studies of children with recurrent abdominal pain (a child is considered to have recurrent abdominal pain when, in the absence of physical or laboratory findings, he or she has experienced at least 3 episodes of pain over a 3-month period that affect the child’s activities (Apley and Naish, 1958).

Mackner et al. (2006) conducted a study in their study where they compared psychosocial adjustment among adolescents with a chronic illness to that of healthy adolescents. They reported that family functioning was
generally similar among healthy adolescents and those with irritable bowel disorder.

Some studies have reported that asthmatics perceive less social support from mothers. It was found that mothers of asthmatic children remove love in order to maintain discipline (Renne and Creer, 1985). Psychological attachment to family continues to be a major phenomenon in the relationship oriented Indian society. There is growing evidence that social support is positively related to psychological well being (Kasl and Cooper, 1987; Kumari and Sharma, 1990; Leiter 1991). Social support can be provided by supportive people who stand in any of a variety of role relationship to the focal person.

It has also been suggested that the need for emotional support of children with asthma is stronger, because they experience more stress compared to their peers (Eiser et al., 1994). This hypothesis was based on results from adult studies. For example, mothers of chronically ill children had higher needs for social support than mothers of children without a chronic disease (Kazak et al., 1988). Children affected by asthmatic bronchitis indeed were less securely attached than healthy comparisons. This difference pertains to several aspects of the attachment-relationship: children with recurrent asthmatic bronchitis showed more avoidance and resistance and less harmonious and comfort seeking behaviours (Howes et al., 1999).

Wood and colleagues (2000) proposed a Bio-Behavioural Family model (BBFM). This biopsychosocial model, posits that particular patterns of family relationship influence and are influenced by the psychological and physiological processes of individual family members (Wood, 1993). Specifically, the BBFM proposes that family proximity, generational hierarchy, parental relationship, triangulation, and interpersonal responsivity are processes that influence one another and interact with individual (family member) psychological and emotional processes in ways that either buffer or exacerbate biological processes related to disease activity in children. It is also
Discussion

posited that individual psychological and emotional processes, in turn, influence and shape the specific family patterns, which includes factors responsible for the severity of the asthmatic disease.

Research and clinical experiences have documented the relevance of socio-emotional factors influencing the onset of asthma, its persistence in time, and the improvement of the prognosis (Wilson et al., 1996; Klinnert et al., 2001). Some investigators have even considered asthma to be a “family” disease (Markson et al., 2000; Sawyer et al., 2001). Although specific family dynamics may be involved in the child’s manifestation of asthmatic symptoms, asthma is considered an organic illness (D’Amato et al., 2000; Pappas et al., 2000). Asthma may be exacerbated by socio-emotional stimuli, [e.g., the emotional stress connected with specific patterns of relationships experienced by the child within the family or within its social context (Carson et al., 1992; Lehrer et al., 2002). However, its etiology is somatic and a genetic component may be involved (Schieken et al., 2002).

Roder et al. (2003) reported from their study that children with asthma were also similar to other children with regard to the perception of available social support from parents, teacher and peers. Children reported receiving emotional support mainly from their parents, and informational support from teachers, as was expected. Informational support was also often provided by parents. On the whole, children with and without asthma were satisfied with the emotional and informational support they received. Based on studies among adults it was hypothesized that the higher stress experience due to having asthma would lead to higher needs for social support.

Cassibba et al. (2004) reported in their study that children affected by recurrent asthmatic bronchitis appeared to be less secure in comparison with healthy children. Their mothers showed a higher percentage of insecure attachment representations. Finally, the intergenerational transmission of attachment was not influenced by the preclinical condition of the children and proposed a model of genetic and social transmission of insecure attachments
in families struggling with asthma. They further added that secure attachment patterns may contribute to buffer the impact of stressful events or family problems on both the physiological and psychological processes in the child. They reported that difficulties caused by children’s respiratory diseases on the one hand and the tendency of their mothers to establish an overprotective or rejecting relationship on the other hand (Cassidy et al., 1999) may interfere with the construction of a secure mother infant attachment. Another possibility is that overprotective or rejecting child-rearing patterns are not so much provoked by the “asthmatic” condition of the children but may be rooted in the parents’ own attachment experiences and representations.

Wright et al. (2004) showed that elevated stress in parents may lead to their children at risk for respiratory problems of aggravating these problems. In addition to the influence of asthmatic bronchitis on attachment problems also found that, the presence of actual or previous asthma in one of the parents appeared to be a risk factor for the insecurity of mothers’ attachment representation. Because of a genetic component of asthmatic bronchitis, mothers of children affected by recurrent asthmatic bronchitis may have experienced in their own childhood (and even in the presence) the strains and stresses caused by the respiratory disease. Although adults may overcome negative childhood attachment experiences, and develop a so-called “earned secure” attachment representation (Hesse et al., 1999; Main et al., 1999; Pearson et al., 1994). The actual presence of recurrent respiratory problems in their children may interfere with the reorganization and updating of their mental representation of attachment. Consequently, the higher rates of insecure attachments in children affected by asthmatic bronchitis may be caused by the normal process of intergenerational transmission of attachment.

The role of child-family interactions causing wheezing symptoms was demonstrated by Purcell et al. in the 1960s. (Purcell et al., 1969). They identified children with “emotional asthma” and measured asthma symptoms and lung function while the child lived at his home with his family. After 2-week baseline period, all other family members were removed from the home and
the child was cared for by a substitute parent. Purcell et al. (1969) found that all 12 of these “emotional” children had fewer pulmonary symptoms, required less medication, and had higher lung function while the child was with the substitute parent. Wheezing symptoms returned when the other family members returned to the home, suggesting a psychological basis for these children’s asthma symptoms.

In the 1970s, Liebman et al. reported that family therapy was effective in the treatment of severe intractable asthma (Liebman et al., 1975). Reporting on seven children, they described the “psychosomatic family” in which the structure of the family maintained the asthma symptoms. The family characteristics that fostered and maintained the asthma were: enmeshment or over involvement between family members; rigidity- the family does not perceive a problem; therefore, there is no need to change; over protectiveness- concern for the sick child in which the family decreases and restricts extra-familial relationships and activities of the patient; lack of conflict resolution: Confrontations involving differences of opinion and issues of autonomy were avoided or diffused leading to a chronic state of submerged unresolved conflict. The parents’ total concentration on the child’s symptoms enabled them to detour or avoid dealing with their marital conflicts. Thus, the child’s symptoms enabled them to detour or avoid dealing with their marital conflicts. Thus, the child’s symptoms protected the family and were consequently reinforced by the family system.

According to Pamides and Ziller (1981), number of investigators have contended that greater adjustment problems amongst allergy patients may be because of various reasons. It was suggested that allergic patients being extremely sensitive, react emotionally to the family problems and thus express dissatisfaction with family life and greater adjustment problems in their social and inter personal relationships and exhibit a greater desire to get away from their home environment. According to Ago (1979), one of the important explanations for such maladjusted patterns in asthmatics may be that
Discussion

Asthmatics had less favourable childhood milieu for personality development than controls and had lower levels of self-esteem and quality of life.

Sallis and Nader (1988) emphasized the importance of context and social setting characteristics. Hansell and Mechanic (1990) suggested that health behaviour is influenced more by general social context that underlies daily routines, than by specific motivation of being healthy. Health behaviour of adolescents seems to be embedded in the activities of every day life. Increasing emotional bonding between the family members through parental support conveying warmth, high quality communication and establishing a positive atmosphere in home together with a certain stability and regularity in roles, rules and power structure might lead to good health in adolescents. They also investigated parental and peer effects and hypothesized that more general family characteristics form the basis of adolescent health behaviours. They found that parental behaviour had no effect through modeling encouragement and support. Instead they came to the conclusion that parents expression of general interest in their adolescents and the establishment of a positive atmosphere in the home, together with high quality communication between the parent and adolescent result in more healthy behaviours in adolescents. These finding were congruent with Pratt's (1976) work of the energized family which argued that families that are balanced on dimensions of cohesion, adaptability and communication and that have a high level of interaction are likely to engage in a wide variety of preventive health behaviours and have by doing so better health than members of non energized families. Studies showed that more general family characteristics could be found to be more influencing a wide range of health behaviours which could be very useful for health promotion it would be possible to design a single intervention resulting in many kinds of health behaviours by adolescents (Hansell and Mechanic, 1990).

Parental criticism, a component of the expressed emotion construct, has also been associated with poor medication adherence for theophylline as well as oral steroids (Wamboldt et al., 1995). According to Wamboldt et al. (1995)
Discussion

and Cohen et al. (1997), many of the psychosocial factors implicated in the rise in asthma morbidity and mortality—for example, childhood anxiety and depression, non-compliance, family conflict—are dependent on family structure and functions.

According to Bussing et al. (1996) at the family level, the nature of relationships between parents and children could play a role in asthma hospitalizations. Children with asthma have been found to have higher rates of clinically significant family stress as compared with healthy children. According to Cohen et al. (1997), social support/networks may buffer direct effects of stress on biological functioning and thus impact on asthma. For example, there is evidence that social networks influence the immune system and may play a role in susceptibility of the host to infection. Cohen and colleagues recently demonstrated an association of social ties with reduced susceptibility to the common cold, decreased mucus secretion, more effective ciliary clearance, and less viral shedding).

Weinstein et al. (1997) reported that psychological difficulty was not increased in this group of asthmatic children and their families. Psychological adaptation in the children was associated with their psychological adaptation of the family but not with disease-related variables. Scores from the impact on family scale, a measure of family quality of life related to the child’s illness, were associated more strongly with the overall psychological characteristics of the family and child and very little with disease characteristics of severity. Weinstein et al. (1997) further revealed that secure family relationships, external social support, and the perception of minimal illness impact were together most strongly associated with the child’s emotional and behavioural strength. Others have reported that severe asthma has a detrimental impact on the child’s psychological adaptation only when the illness co-occurs with other adverse circumstances in the family (Hamlett et al, 1992).

Brooke (1999) examined the role of family in manning childhood chronic illness asthma. 92 mother child dyads comprised the sample. Children were
Discussion

administered questionnaires to assess perceptions of family functioning. Results revealed that child psychosocial adjustment varied as a functioning illness demands and family functioning. Children with less supportive and with more conflict in family functioning demonstrated significantly more adjustment problems and severity of illness than children who viewed their family environment as positive. Weil et al. (1999) reported that the existence of psychopathology among caregivers of children with asthma almost doubled the likelihood of hospitalization for asthma.

The emotional investment in family rituals has been found to be associated with reduced anxiety levels in children with asthma (Markson et al., 2000). In a longitudinal study, McNelis and colleagues (2000) studied factors related to self-concept in 106 children with asthma aged 8 to 13 years. The poorest self-concept was found in children who had a more negative attitude toward their illness, had less satisfaction with family relationships, and used more negative coping behaviours. According to Klinnert et al. (2001), parenting difficulties early in a child’s life, particularly during times of high stress, have been found to predict the onset of asthma in childhood.

Sharma (2002) found that asthmatic adolescents perceived their family environment to be high on conflict, moral religious emphasis and control dimensions. Lehrer et al. (2002) showed that adolescents from families with high levels of parental criticism showed greater improvements in asthma during an inpatient hospital stay, a finding that may be simply explained by the child’s separation from the family.

Chen et al. (2003) examined relationships between psychosocial factors and asthma rehospitalization patterns in 115 children (age 4–18) wherein he reported that prospectively, caretaker characteristics (lower sense of mastery, being less emotionally bothered by asthma) predicted greater likelihood of future asthma hospitalizations. Lifetime history of hospitalizations was associated with family impacts (greater family strain and family conflict, greater financial strain) as well as caretaker characteristics (greater personal strain,
beliefs about not being able to manage one’s child’s asthma). They also found that strain in the family, in terms of both conflicts among family members and impact of illness on family relationships, could be associated with more frequent hospitalizations among children with asthma. At the level of characteristics of the individual caretaker, the beliefs that parents hold about their ability to manage their child’s asthma and the quality of life that they maintain while caring for a child with asthma may be associated with asthma hospitalizations.

According to Fiese et al. (2004), asthma management becomes part of ongoing family life, and those families who are more capable of the organization of family routines are expected to have more effective management strategies. Regular family routines are reportedly related to shorter bouts of respiratory illness in infants. Wood et al. (2007) attempted to assess emotional triggering of pediatric asthma and ascertain its contribution to disease morbidity and functional status. They found that negative family emotional climate (NFEQ) was associated with depressive symptoms, which in turn were associated both directly and indirectly (by way of emotional triggering) with disease severity. Comparison of nested models indicated the possibility of differential roles and pathways for anxious versus depressive symptoms. Findings further suggested possible pathways of effect by which family emotional climate and child depressive symptoms may influence pediatric asthma disease severity by way of potentiating emotional triggering of asthma.

Family members are directly affected by the psoriasis disease. Parents may blame themselves if they believe the disease to be hereditary and siblings may fear acquiring the disease themselves (Dungey and Busselmeir, 1982). Kerr (1992) used psoriasis as a model to examine the impact of illness on the family emotional system. He suggested that the clinical manifestations of psoriasis are affected by two factors: the degree of adaptiveness and the level of chronic anxiety. Although anxiety may be experienced by individuals, it is also a property of the family system. To some extent, the way in which family
Discussion

members relate to each other is responsible for generating chronic anxiety. Therefore, the higher the anxiety in the family system, the greater the strain put upon each individuals' adaptive capacity. The more adaptive family members are, the easier it becomes for one person to become anxious without evoking anxiety from other family members. This way of relating allows family members to become supportively involved rather than withdrawing or becoming anxiously focused on each other. As indicated by the author, if this degree of differentiation is maintained, the family system will be able to successfully adapt to the possibility of future disruptive events or changes.

It appears, therefore, that the psychological and emotional wellbeing of children whose appearance deviates from the norm does not depend on their physical status but rather on differences in family functioning, social support and religious or philosophical attitudes (Hurtig et al., 1989). Cohen and Nadelson (1982) used infantile eczema as a model to explain the role of intimate physical relationship in skin disorders. Their study indicated that the intimate physical relationship between the infant and a primary caregiver is sometimes directly affected. This may be as a result of the child's own preoccupation with his/her skin due to discomfort or irritation, or due to the parents' own feelings of repulsion and resentment of the need to apply medicated lotions or soothing creams to a highly distressed child. If the relationship between primary caregiver and child is not breached, then implications for emotional and social development will not only have an effect on psychosocial development during childhood but may continue into adolescence (Barden, 1990).

King and Wilson (1991) demonstrated a significant relationship between interpersonal stress on a given day and the skin condition on the day after. Other studies suggest that daily emotional stress such as atopic dermatitis-related problems, rigid family structure, or negative communication with significant others might predict symptom severity in children and adults with atopic dermatitis, respectively (Ehlers et al., 1994).

305
B) GENDER DIFFERENCES AMONG CHRONICALLY ILL ADOLESCENTS

Depression and Gender Differences among Chronically Ill Adolescents

It was hypothesized that chronically ill male adolescents were expected to score lower in comparison to chronically ill female adolescents on Depression in all the chronic disease groups.

\textbf{t-ratios} comparing the male and female adolescents in Total Disease Group, Gastrointestinal Disorder Group, Respiratory Disorder Group and Skin Disorder Group did not emerge significant for Depression.

A perusal of \textbf{Analysis of Variance} for Depression revealed that F-ratios for gender did not emerge significant.

Depression did not emerge as significant discriminant in \textbf{Discriminant Functional Analysis} comparing male and female adolescents in case of Total Disease Group, Gastrointestinal Disorder Group, Respiratory Disorder Group and Skin Disorder Group.

\textbf{Eysenckian Personality Dimensions, Self Esteem and Gender Differences among Chronically Ill Adolescents}

\textbf{a).} It was hypothesized that chronically ill male adolescents were expected to score higher in comparison to chronically ill female adolescents on Extraversion, in all the chronic disease groups. It was also hypothesized that chronically ill male adolescents were expected to score lower in comparison to chronically ill female adolescents on Neuroticism and Psychoticism in all the chronic disease groups.

Table 7 reveals means, standard deviations and \textbf{t-ratios} for adolescent males (M) and adolescent females (F) in the Total Disease Group. t-ratio emerged significant on Neuroticism (t= 3.98, M<F).
Table 9 reveals means, standard deviations and t-ratios comparing the adolescent males (M) and adolescent females (F) in Respiratory Disorder Group. t-ratio emerged significant on Neuroticism (t= 2.10, M<F).

Table 10 reveals means, standard deviations and t-ratios for the adolescent males (M) and adolescent females (F) in Skin Disorder Group. t-ratio emerged significant on Neuroticism (t= 3.28, M<F).

t-ratios comparing the male and female adolescents in Gastrointestinal Disorder Group did not emerge significant on Eysenckian dimensions of Personality.

A perusal of Analysis of Variance of (table 29) revealed that F-ratio for gender emerged significant for Neuroticism (F=17.7, p< at 0.01).

A perusal of Discriminant Functional Analysis comparing male and female adolescents in Total Disease Group (table 46a) revealed that Neuroticism (λ=.72) emerged as significant discriminant.

A perusal of Discriminant Functional Analysis comparing male and female adolescents in Respiratory Disorder Group (table 46c) revealed that Neuroticism (λ=.61) emerged as significant discriminant.

A perusal of Discriminant Functional Analysis comparing male and female adolescents in Skin Disorder Group (table 46d) revealed that Neuroticism (λ=.68) and Social Desirability (Lie-score) (λ=.68) emerged as significant discriminants.

Eysenckian Personality dimensions did not emerge as significant discriminant in Discriminant Functional Analysis comparing male and female adolescents in case of Gastrointestinal Disorder Group.

b) It was hypothesized that chronically ill male adolescents were expected to score higher in comparison to chronically ill female adolescents on Self Esteem in all the chronic disease groups.


t-ratios comparing male and female adolescents in Total Disease Group, Gastrointestinal Disorder Group, Respiratory Disorder Group and Skin Disorder Group did not emerge significant on Self Esteem.

A perusal of Analysis of Variance for Self Esteem revealed that F-ratio for gender did not emerge significant.

A perusal of Discriminant Functional Analysis for male and female adolescents in Respiratory Disorder Group (table 46c) revealed that Self Esteem ($\lambda=.60$) emerged as significant discriminant.

A perusal of Discriminant Functional Analysis for male and female adolescents in Skin Disorder Group (table 46d) revealed that Self Esteem ($\lambda=.60$) emerged as significant discriminant.

Self Esteem did not emerge as significant discriminant in Discriminant Functional Analysis comparing male and female adolescents in Total Disease Group and Gastrointestinal Disorder Group.

Stress, Ways of Coping and Gender Differences among Chronically Ill Adolescents

a) It was hypothesized that chronically ill male and female adolescents were expected to score differently on Stress Measures viz. Stressfulness of life events, Stress Symptoms in all chronic disease Groups.

Table 7 reveals means, standard deviations and t-ratios comparing adolescent males (M) and adolescent females (F) in the Total Disease Group. t-ratios emerged significant on Stressful Life Events in Past 1 yr ($t=7.16$, $M>F$); Stressful Life Events Life Time ($t=6.99$, $M>F$) and Stress Symptoms ($t=2.66$, $M>F$).

Table 8 reveals means, standard deviations and t-ratios comparing the adolescent males (M) and adolescent females(F) in Gastrointestinal Disorder Group. t-ratios emerged significant on Stressful Life Events in Past 1 yr ($t=4.11$, $M>F$) and Stressful Life Events in Life Time ($t=3.96$, $M>F$).
Table 9 reveals means, standard deviations and t-ratios comparing the adolescent males (M) and adolescent females (F) in Respiratory Disorder Group. t-ratios emerged significant on Stressful Life Events in Past 1 yr (t=5.55, M>F) and Stressful Life Events Life Time (t=5.38, M>F).

Table 10 reveals means, standard deviations and t-ratios comparing the adolescent males (M) and adolescent females (F) in Skin Disorder Group. t-ratios emerged significant on Stressful Life Events Life Time (37.26<33.73, t=3.96) and Stressful Life Events in Past 1 yr (30.99>27.56, t=4.11).

A perusal of Analysis of Variance for Stress Measures viz. Stressfulness of life Events and Stress Symptoms revealed that F-ratios for gender did not emerge significant.

A perusal of Discriminant Functional Analysis comparing male and female adolescents in Respiratory Disorder Group (table 46c) revealed that Stressful life events in past 1 year (λ=.87) emerged as significant discriminant.

A perusal of Discriminant Functional Analysis comparing male and female adolescents in Skin Disorder Group (table 46d) revealed that Stressful Life Events In Past 1 Year (λ=.65) emerged as significant discriminant.

Stress Measures viz. Stressfulness of Life Events and Stress Symptoms did not emerge as significant discriminant in Discriminant Functional Analysis comparing male and female adolescents in Total Disease Group and Gastrointestinal Disorder Group.

a) It was hypothesized that chronically ill male adolescents were expected to score higher in comparison to chronically ill female adolescents on Problem Focused Coping Styles viz. Planful Problem Solving, Seeking Social Support, Accepting Responsibility and Confrontive Coping in all the chronic disease groups. It was also hypothesized that chronically ill male adolescents were expected to score lower in comparison to chronically ill female adolescents on Emotion Focused Coping Styles.
Discussion

viz. Distancing, Self Controlling, Escape Avoidance and Positive Reappraisal in all the chronic disease groups.

Table 7 reveals means, standard deviations and t-ratios comparing adolescent males (M) and adolescent females (F) in the Total Disease Group. t-ratios emerged significant on Accepting Responsibility (t= 2.02, M<F); Self Control (t= 2.89, M<F) and Positive Reappraisal (t= 3.08, M<F).

Table 9 reveals means, standard deviations and t-ratios comparing the adolescent males (M) and adolescent females (F) in Respiratory Disorder Group. t-ratios emerged significant on Confrontive Coping (t= 2.30, M<F); Seeking Social Support (t= 2.16, M<F); Accepting Responsibility (t= 2.89, M<F) and Positive Reappraisal (t= 2.30, M<F).

Table 10 reveals means, standard deviations and t-ratios comparing the adolescent males and adolescent females in Skin Disorder Group. t-ratio emerged significant on Positive Reappraisal (t= 2.05, M<F).

t-ratios comparing the adolescent males and adolescent females in Gastrointestinal Disorder Group did not emerge significant on Ways of Coping.

A perusal of Analysis of Variance (tables 23, 22, 27) revealed that F-ratios for gender emerged significant for Accepting Responsibility (F=10.2, p< at 0.05), Self Control (F=10.2, p< at 0.05) and Distancing (F=4.8, p< at 0.05).

A perusal of Discriminant Functional Analysis comparing male and female adolescents in Total Disease Group (table 46a) revealed that Accepting Responsibility (λ=.69) emerged as significant discriminant.

Ways of Coping did not emerge as significant discriminant in Discriminant Functional Analysis comparing male and female adolescents in case of Gastrointestinal Disorder Group, Respiratory Disorder Group and Skin Disorder Group.
Perceived Social Support, Perceived Parental Bonding Dimensions, 
Family Environment, Gender Differences among Chronically Ill 
Adolescents

a) It was hypothesized that chronically ill male adolescents were expected to score lower in comparison to chronically ill female adolescents on Perceived Social Support in all the chronic disease groups.

Table 7 reveals means, standard deviations and t-ratios comparing adolescent males and adolescent females in the Total Disease Group. t-ratio emerged significant on Perceived Social Support (t= 3.48, M>F).

Table 10 reveals means, standard deviations and t-ratios comparing the adolescent males (M) and adolescent females (F) in Skin Disorder Group. t-ratio emerged significant on Perceived Social Support (t= 2.99, M<F).

t-ratios comparing male and female adolescents did not emerge significant in Gastrointestinal Disorder and Respiratory Disorder Group for Perceived Social Support.

A perusal of Analysis of Variance for Perceived Social Support revealed that F-ratio for gender did not emerge Significant.

Perceived Social Support did not emerge as significant discriminant in Discriminant Functional Analysis comparing male and female adolescents in Total Disease Group, Gastrointestinal Disorder Group, Respiratory Disorder Group, Skin Disorder Group and Skin Disorder Group.

b) It was hypothesized that chronically ill male and female adolescents were expected to score differently on Perceived Parental Bonding dimensions viz. Perceived Parental Care and Perceived Parental Over protection in all the chronic disease groups.

Table 7 reveals means, standard deviations and t-ratios comparing adolescent males and adolescent females in the Total Disease Group. t-ratio emerged significant on Perceived Parental Care ( t=2.14, M<F).
Discussion

Table 8 reveals means, standard deviations and \textit{t-ratios} comparing the males and females in Gastrointestinal Disorder Group. \textit{t-ratios} emerged significant on Perceived Parental Care (t= 2.26, M<F) and Perceived Parental Over Protection (t= 2.26, M>F).

\textit{t-ratios} comparing the male and female adolescents in Respiratory Disorder Group and Skin Disorder Group did not emerge significant for Perceived Parental Bonding dimensions.

A perusal of \textit{Analysis of Variance} for Perceived Parental Bonding dimensions revealed that F-ratios for gender did not emerge significant.

Perceived Parental Bonding dimensions did not emerge as significant discriminant in \textit{Discriminant Functional Analysis} comparing male and female adolescents in Total Disease Group, Gastrointestinal Disorder Group, Respiratory Disorder Group, Skin Disorder Group and Skin Disorder Group.

c) It was hypothesized that chronically ill male and female adolescents were expected to score differently on dimensions of Family Environment viz. Relationship Dimension, Personal Growth Dimension and System Maintenance Dimension in all the chronic disease groups.

Table 7 reveals means, standard deviations and \textit{t-ratios} for adolescent males and adolescent females of the Total Disease Group. \textit{t-ratios} emerged significant on Personal Growth (t= 2.24, M>F); Independence ( t= 2.15, M<F); Active Recreation Orientation ( t= 3.13, M<F); Relationship (t= 2.26, M<F); Expression (t= 2.90, M<F) and Cohesion (t= 2.68, M<F).

Table 8 reveals means, standard deviations and \textit{t-ratios} comparing the adolescent males and adolescent females in Gastrointestinal Disorder Group. \textit{t-ratios} emerged significant on Cohesion (t= 2.80, M>F); Expression (t= 2.89, M>F); Personal Growth (t= 3.79, M<F); Independence (t= 2.57, M<F); Achievement Orientation (t= 2.07, M>F); Intellectual Cultural Orientation (t= 3.78, M>F) and Organisation (t= 2.67, M>F).
t-ratios comparing the adolescent males and adolescent females in Respiratory Disorder Group and Skin Disorder Group did not emerge significant on Family Environment dimensions.

A perusal of Analysis of Variance (tables 31, 32,) revealed that F-ratio for gender emerged significant for Cohesion (F=5.13, p< at 0.01) and Expression (F= 8.32, p< at 0.01).

A perusal of Discriminant Functional Analysis of male and female adolescents in Total Disease Group (table 46 a) revealed that Cohesion (λ=.69) and Control (λ=.69) emerged as significant discriminants.

A perusal of Discriminant Functional Analysis for male and female adolescents in Gastrointestinal Disorder Group (table 46 b) revealed that Active Recreation Orientation (λ=.85) and Cohesion (λ=.85) emerged as significant discriminants.

A perusal of Discriminant Functional Analysis of male and female adolescents in Respiratory Disorder Group (table 46 c) revealed that Cohesion (λ=.59) emerged as significant discriminant.

A perusal of Discriminant Functional Analysis of male and female adolescents in Skin Disorder Group (table 46 d) revealed that Cohesion (X=.59) and Control (k=.58) emerged as significant discriminants.

Sex is generally used to refer to a person's biological femaleness or maleness. Gender is generally used to refer to the no biological aspects of being female or male, in other words, the social or masculinity (Wizeman, 2001). However, its known that most differences between males and females are a function of the interaction between biology and environment. In this review, gender is used as a more inclusive term. Sex is used for the classification of individuals based on their reproductive organs and functions assigned by chromosomal complement. Gender roles are based on sex stereotypes, which are socially shared beliefs that biological sex determines certain qualities (Wizeman, 2001).
Researchers have explored gender differences among chronically ill adolescents. According to Nolen – Hoeksema and Girgus (1994), there are no gender differences in depression rates in prepubescent children, but, after the age of 15, girls and women are about twice as likely to be depressed as boys and men. They put forth three models for how gender differences in depression might develop in early adolescence. According to the first model, the causes of depression are the same for girls and boys, but these causes become more prevalent in girls than in boys in early adolescence. According to second model, there are different causes of depression in girls and boys, and the causes of girls’ depression become more prevalent than the causes of boys’ depression in early adolescence. According to third model, girls are more likely than boys to carry risk factors for depression even before early adolescence, but these risk factors lead to depression only in the face of challenges that increase in prevalence in early adolescence. Most studies of gender differences in depression have focused on the effects of individual variables on depression in girls and boys rather than on testing models of how these differences develop.

According to Nolen-Hoeksema and Girgus (1994), gender differences in depression most likely emerge in early adolescence because gender differences in risk factors for depression that develop during childhood meet up with biological and social challenges whose prevalence increases in early adolescence. Furthermore, they found that review suggested that, although the challenges increase to some extent for both girls and boys, the increase is much larger for girls. Thus, girls bring both more risk factors for depression to adolescence and are presented with more biological and social challenges during this important life period.

According to Tung and Jagjit (1994), there may be an increased vulnerability to depressive symptoms in reaction to both normative and non-normative events in girls when they are experiencing the first physical changes of puberty, perhaps particularly in those girls who are experiencing these changes before their peers or who dislike the changes more than their peers.
Boys may not be as vulnerable to stressful events during their pubertal changes as girls, perhaps because boys like the physical changes they are undergoing, whereas girls do not.

According to Heaven (1996), females are higher on rumination and therefore more attentive to their mood and emotional experiences. As a consequence, they tend to focus much more on the mood and various symptoms than men do. This activity can often result in increases in current depressive mood and heightened negative self evaluations. This is likely to result in an increase in helplessness (Compas et al., 1993). Traditionally, males have been socialized not to focus on their moods or emotions, but rather to focus on other tasks or activities. As a result, males generally have lower levels of depressive affect (Compas, 1993).

Marcotte et al. (2002) opined that although boys present a similar or even higher rate of depressive symptoms than girls prior to adolescence, girls become more depressive than boys during their teenage years. The result of their studies supported the view that body image, self esteem and negative stressful life events mediate the relationship between gender and depressive symptoms during adolescence.

As regards gender differences in Eysenckian dimensions of Personality, According to Sehgal (2003), male adolescents were found to be higher on Psychoticism and lower on Extraversion, Neuroticism and Social Desirability in comparison to female adolescents. Similar findings have been supported by previous researches (Mohan et al., 1987; Mohan 1994; Mohan and Gulati, 1989; Mohan and Ram Avtar, 1985; Mohan, 1996; Mohan and Azhar, 1997) which reported girls to score higher on Neuroticism and Extraversion and Psychoticism. Studies have reported that girls scored higher than boys on extraversion, which is inconsistent with some of the earlier researches. How ever this is supported by some studies on adolescents, Home Science students, smokers, drug addicts, nurses and youth workers (Mohan and Sehgal, 2002; Agochia et al., 2000). The higher scores on
Extraversion obtained by the girls could be explained in terms of higher age matched spurt in maturity of girls than boys (Nolen-Hoeksema and Girgus, 1994).

McCrae and Costa (1988) also reported developmental trends in personality of boys and girls. It was found that Neuroticism was higher in girls. Openness to experience increased in both boys and girls, whereas Extraversion, Agreeableness and Conscientiousness were stable across the developmental period.

Bergman and Scott (2001) reported clear gender differences in self esteem, self efficacy, and health risk behaviours. Suls et al. (2003) studied self-esteem and comparisons with the self, friends and peers. They found that there were no significant gender differences in self-esteem. Sehgal (2003) found that on self esteem female adolescents scored higher than adolescent males.

A number of researchers have suggested that adolescents who face difficult events at the same time their bodies are undergoing the changes of puberty are at increased risk for distress and depression (Brooks-Gunn and Warren, 1989). Moreover, it is argued, because girls dislike the changes in their bodies, whereas boys like their pubertal changes, adolescent girls are more sensitized to stressful events than adolescent boys.

Adolescent boys and girls differ in their experiences of family and interpersonal related stress. Compas et al., (1986) reported that females are more prone to report major negative events that are related to family, peers and sexuality. In any event, females appear more sensitive to stress inducing changes in friendship and inter-personal networks than males. Females are more likely to use social support and more emotional expression strategies than males.

Newcomb et al. (1981) did not find a difference in frequency of negative, positive or total life events for males and females. Broader (1996) reported that in their study some gender and age specific differences in levels of
Discussion

stressors and distress were observed. In their studies females reported more stressful life events and more psychological symptoms of distress than males.

Compas et al. (1986) said that surprisingly strong differences exist in the life events-disorder relationship as a function of gender. In spite of the fact that females experienced significantly more negative events than males, the correlation between negative events and symptoms was significantly higher for males \( r=0.49 \) than for females \( r=0.14 \). This suggests that it is not simply the number or severity of negative events that leads to an association with the disorder.

Many researchers have reported gender differences in coping styles. Banyard and Sandra (1993) opined that unlike the prevalent belief, women are not deficient copers, that they are no better or worse than men, just different. Women and men are exposed to different stressors as a result of the different tasks that they perform in society and are thus required to use different coping strategies.

Tung and Jagjit (1994) found that males used coping styles of 'Denial and Isolation more frequently. Males are adept at denying stress upto some extent and if stress persists, they try to fight it out with intellectual skills. Females on the other hand, when faced with a threatening situation, instead of using effective coping strategies they start blaming themselves for the situation. They tend to use the skill of turning skill of turning against self.

In contrast several studies have failed to find gender differences in coping strategy use, either in general or in specific types of stressful situations, when occupy the same social role while investigating the premise that males tend to use more problem focused coping. Rosario et al. (1988) found in three studies that males and females in the same social roles did not differ in their reported use of problem-focused coping strategies, or emotion focused coping strategy. Hamilton and Fagot (1988) found no gender differences in expressive (or emotion focused) and instrumental (or problem focused) coping strategies in undergraduate students experiencing chronic stressors.
Sigmon et al. (1995) found gender differences in cognitive appraisals of stressful situations as more unpleasant than males, where as males perceived males perceived them selves as having more control and viewed stressful events as more of a challenge than a threat.

Lohman (2000) studies how adolescents coped with conflict in the family which was related to adolescent adjustment and developmental outcomes. Females tended to utilize more emotion focused coping when dealing with parent conflict than did males. Where as males used more avoidant coping when managing parent conflict than did females. McDonald (2001) studied gender differences in the relationship of coping resources to symptoms of stress, both physical and emotional. The study tested 18 and 19 year old college students. The college females had significantly higher emotional resources and ability to give and receive social support than the college males. The college males had significantly higher physical coping resources than the females.

Nummer et al. (2001) studied the relation of gender, age, coping strategies, stress, depression and self esteem in 1990 male and female adolescents. The results revealed higher stress levels, more conflict with mothers and more avoidant coping strategies among female adolescents compared to males at 14 years, while males showed fewer depressive symptoms and higher self esteem than females at all ages. The results also showed that depression in late adolescence was associated with stress and avoidant coping at younger ages among females but with conflict with friends among males. Thapar (2002) found that male adolescents scored higher on problem focused coping styles to deal with stress and female adolescents use more express emotion focused coping styles to deal with stress. Renk and Creasey (2003) examined the relationships among gender and coping in late adolescence. Females endorsed greater use of emotion focused coping strategies than males.
Brooks-Gunn and Warren, (1989) examined gender differences in perceived social support, indicated that girls reported significantly higher levels of perceived social support than boys. Thapar (2000) reported that female adolescents score higher on parental attachment, parental trust and parental communication as compared to male adolescents. Thapar (2000) also found that male adolescents scored higher on independence, conflict, achievement orientation and intellectual cultural orientation than female adolescents. The author also reported that female adolescents scored higher on cohesion, expressiveness, active-recreational orientation, moral-religious emphasis and control dimensions of family environment as compared to male adolescents.

Gender and Chronic Diseases

One important social factor that impacts on health and well-being, which begins in early life and continues throughout, is gender role socialization. The literature suggests that many of the physical and mental health concerns experienced by women are influenced by socialization into the female gender role, Despite postulated links between health problems such as eating disorders, depression, anxiety disorders, and functional somatic disorders (including functional gastrointestinal disorders), there have been few empirical investigations (Norter and Sperber, 2006).

Some researchers have reported gender differences in chronic diseases. According to Chang (2006), patients with functional gastrointestinal disorders often experience emotional distress, a perceived lack of validation, and an unsatisfactory experience with health care providers. There is evidence for sex and gender-related differences in functional gastrointestinal disorders, particularly irritable bowel syndromes. Where as the majority of functional gastrointestinal disorders, including irritable bowel syndromes, bloating, constipation, chronic functional abdominal pains, and pelvic floor dysfunction, are more prevalent in women than men, functional oesophageal and gastro duodenal disorders do not appear to vary by gender. Gender differences in
social factors, psychological symptoms, and response to psychological treatments have not been adequately studied. However, there appears to be a greater clinical response to serotonergic agents developed for irritable bowel syndrome in women compared to men. The impact of social and cultural factors on the meaning, expression, and course of functional gastrointestinal disorders are important. The prevalence of irritable bowel syndrome appears to be lower in non-Western than Western countries (Chang et al., 2006).

Chang et al. (2006) further reported that the findings of most studies suggest that patients with functional gastrointestinal disorders who are seen in outpatient gastrointestinal treatment settings have high rates of psychiatric disorder and psychological distress (between 40% and 60%). In studies that have examined gender differences in functional gastrointestinal disorders, or reported on certain aspects of gender, relatively few studies have reported differences in psychological symptom scores between men and women. Lee et al. (2001) found no difference in psychological symptoms between men and women. Blanchard et al. (2001) found small differences between men and women in patients seeking psychological treatment for irritable bowel syndrome using a psychological self-report measure, but no difference using a diagnostic interview. Two small studies, one from the United Kingdom and one from Singapore, have reported differences between men and women with irritable bowel syndrome, (Corney et al., 1990; Fock et al., 2001) with women reporting higher rated of psychological distress than men. In the former study, the General Health Questionnaire was used, whereas the study from Singapore used the Eysenck Personality Questionnaire. Another study demonstrated that female hospital outpatients with irritable bowel syndrome had a poorer health-related quality of life and greater psychological distress on some health-related quality of life measures than female primary care patients, but this difference was not seen in men (Corney et al., 1990).

Toner et al. (2000) identified several common gender role concerns or themes that have been highly salient and meaningful to women with functional gastrointestinal disorders. Recurrant abdominal pain is a prevalent pain
disorder of childhood and adolescence with females outnumbering males from puberty onward (Schraff, 1995).

Vila et al. (1999) studied the relationships between asthma and type and incidence of psychiatric problems in a pediatric population. 93 asthmatic children were compared with those of 93 children with insulin-dependent diabetes mellitus (IDDM) group for studying psychopathological problems. They reported that girls did not suffer more psychiatric disturbances than did boys.

It is only in recent years that the psycho dermatological literature has begun to address the possibility that acne may have a differential psychological and emotional impact according to the gender of the patient. The mean difference between male and female scale scores suggest that the psychological impact of acne may be greater for women than it is for men. It has previously been illustrated that female patients with acne report significantly higher levels of embarrassment than males (Krowchuk, 1991). According to Kellet and Gawkrodger (1999), the gender differences research base has also been expanded by illustrating that women are likely to experience greater psychological difficulties than their male counterparts across a wide range of psychological factors including self-efficacy, self-consciousness, locus of control, obsessive-compulsiveness and poor body image. It is likely that the gender difference observed across studies is due to the operation of wider cultural forces in Western societies regarding the differential importance of appearance in relation to gender.

Aktan et al. (2000) concluded that acne results in higher anxiety in adolescent girls. Although acne and moderate/severe acne are more common in adolescent boys, the severity of acne was found to be similar in boys and girls with acne. Adolescent girls are more vulnerable than boys to the negative psychological effects of acne. Khan et al. (2000) investigated the mental health problems in patients suffering from acne and to determine significant differences in mental health problems studied to determine the Mental Health


Discussion

problem in Patients suffering from acne and to determine significant difference in mental health problems in acne patients in comparison to seborrhic dermatitis patients as a control group. A consistent finding in the study over six months depicted the difference between gender i.e. more females had depression than males.

INTERACTION EFFECTS ON ANOVA

A perusal of Analysis of Variance tables (18, 24, 25, 37) revealed F-ratios for interaction emerged significant for Measures of Stress viz. Stress symptoms (F=6.86, p< at 0.05); Ways of Coping viz. Escape Avoidance (F=4.60, p< at 0.05); Distancing (F=4.8, p< at 0.05) and Family Environment Dimensions viz. Achievement Orientation (F= 8.32, p< at 0.01); Organization (F=4.75, p< at 0.05).

C) CORRELATES AND PREDICTORS OF MENTAL HEALTH

Correlation analysis was done to study the relationship among the chosen variables viz. Depression, Perceived Social Support and Perceived Parental Bonding Dimensions, Measures of Stress, Ways of Coping, Eysenckian Personality Dimensions, Self Esteem and Family Environment dimensions viz. Relationship Dimensions, Personal Growth Dimension and System Maintenance Dimension in Chronically ill adolescents of the Disease Groups (namely Gastrointestinal Disorder Group, Respiratory Disorder Group, Skin Disorder Group), Healthy Group, High Mental Health Group of Total Disease Group, Low Mental Health Group of Total Disease Group and Male and Female Adolescents for Total Disease Group. In addition another aim was to identify the predictors of mental health using Multiple Regression Analysis for the same groups with GHQ as a criterion variable.

Table 47 a shows that in Total Disease Group, mental health as measured by GHQ was positively correlated with Depression [r=0.52]; Perceived Parental Bonding dimension viz. Perceived Parental Over Protection

* Low Score on GHQ suggestive of High Mental Health.
** High Score on GHQ suggestive of Low Mental Health

322
Discussion

[r=0.22]; Ways of Coping viz. Accepting Responsibility [r=0.16]; Escape Avoidance [0.2]; Eysenckian Personality dimensions viz. Psychoticism [r=.22] and Neuroticism [r=0.27]. Mental health was negatively correlated with Perceived Social Support [r=-0.20]; Self Esteem [r=-.30]; Family Environment dimensions viz. Independence [r=-0.19]; Achievement Orientation[r=-0.21]; Active Recreation Orientation[r=-0.21]; Personal Growth [-0.24]; Organization [r=-0.2] and System Maintenance [r=-0.14].

Table 47 b shows that in Gastrointestinal Disorder Group mental health as measured by GHQ was positively correlated with Depression [r=0.51]; Eysenckian Personality dimensions viz. Psychoticism [r=.31] and Neuroticism [r=0.31]. Mental health was negatively correlated with Self Esteem [r=-.48]; Family Environment dimensions viz. Independence [r=-0.19]; Achievement Orientation[r=-0.27].

Table 47 c shows that in Respiratory Disorder Group, mental health as measured by GHQ was positively correlated with Depression [r=0.46]; Perceived Parental Bonding dimension viz. Perceived Parental Over Protection [r=0.35]; Ways of Coping viz. Accepting Responsibility [r=0.26]; Escape Avoidance [0.41]; Eysenckian Personality dimensions viz. Psychoticism [r=0.30] and Neuroticism [r=0.44]. Mental health was negatively correlated with Perceived Social Support [r=-0.38]; Self Esteem [r=-.33]; Family Environment dimensions viz. Independence [r=-0.31]; Active Recreation Orientation[r=-0.25]; Personal Growth [-0.29] and Organization [r=-0.23].

Table 47 d shows that in Skin Disorder Group, mental health as measured by GHQ was positively correlated with Depression [r=0.56]; Ways of Coping viz. Confrontive Coping [r=0.26]; Eysenckian Personality dimension viz. Extraversion [r=0.30]. Mental health was negatively correlated with Self Esteem [r=-0.27]; Family Environment dimensions viz. Intellectual Cultural Orientation [r=-0.33]; Active Recreation Orientation[r=-0.21]; Personal Growth [-0.29] and Organization [r=-0.2].
Table 47 e shows that in Healthy Group, mental health was significantly correlated with Depression \( r = 0.45 \). Mental health was negatively correlated with Family Environment dimensions viz. Cohesion \( r = -0.41 \); Relationship \( r = -0.46 \); Intellectual Cultural Orientation \( r = -0.40 \); Organization \( r = -0.46 \) and System Maintenance \( r = -0.36 \).

Table 47 f shows that adolescent males of Total Disease Group shows that mental health as measured by GHQ was significantly correlated with Depression \( r = 0.55 \); Perceived Parental Bonding dimension viz. Perceived Parental Over Protection \( r = 0.20 \); Ways of Coping viz. Accepting responsibility \( r = 0.22 \); Self Controlling \( r = 0.21 \); Eysenckian Personality dimensions viz. Psychoticism \( r = 0.21 \) and Neuroticism \( r = 0.29 \). Mental health was negatively correlated with Perceived Social Support \( r = -0.25 \); Perceived Parental Bonding dimension viz. Perceived Parental Care \( r = -0.20 \); Self Esteem \( r = -0.51 \); Family Environment dimensions viz. Independence \( r = -0.18 \); Intellectual Cultural Orientation \( r = -0.21 \); Active Recreation Orientation \( r = -0.18 \) and Personal Growth \( r = -0.27 \).

Table 47 i shows that adolescent females of Total Disease Group shows that mental health as measured by GHQ was significantly correlated with Depression \( r = 0.49 \); Perceived Parental Bonding dimension viz. Perceived Parental Over Protection \( r = 0.24 \); Ways of Coping viz. Escape Avoidance \( r = 0.32 \); Eysenckian Personality dimensions viz. Psychoticism \( r = 0.24 \) and Neuroticism \( r = 0.26 \). Mental health was negatively correlated with Perceived Social Support \( r = -0.25 \); Self Esteem \( r = -0.24 \); Family Environment dimensions viz. Expression \( r = -0.32 \); Independence \( r = -0.21 \); Achievement Orientation \( r = -0.37 \); Active Recreation Orientation \( r = -0.19 \); Personal Growth \( r = -0.27 \) and Organization \( r = -0.28 \).

**Mental Health and its Predictors among Chronically ill Adolescents**

With GHQ as the criterion variable, **Regression Equations** were run for the Total Disease Group, Gastrointestinal Disorder Group, Respiratory...
Discussion

Disorder Group, Skin Disorder Group, Healthy Group, male adolescents in Total Disease Group and female adolescents in Total Disease Group.

Table 48 a shows Regression Equation for Total Disease Group (n=240). For the criterion variable of GHQ R^2 was 0.31. The predictors that emerged significant in descending order of contribution were Self Esteem (β=-0.21), Achievement Orientation (β=-0.15), Neuroticism (β=0.28), Moral Religious Emphasis (β=-0.24), Escape Avoidance (β=0.18), Active Recreation Orientation (β=-0.14) and Lie (Social Desirability) (β=0.13).

Table 48 b shows Regression Equation for Gastrointestinal Disorder Group (n=80). For the criterion variable of GHQ R^2 was 0.36. The predictors that emerged significant in descending order of contribution were Self Esteem (β=-0.47), Psychoticism (β=0.23) and Achievement Orientation (β=-0.23).

Table 48 c shows Regression Equation for Respiratory Disorder Group (n=80). For the criterion variable of GHQ R^2 was 0.42. The predictors that emerged significant in descending order of contribution were Neuroticism (β=0.30), Independence (β=-0.24), Escape Avoidance (β=0.28) and Perceived Social Support (β=-0.26).

Table 48 d shows Regression Equation for Skin Disorder Group (n=80). For the criterion variable of GHQ R^2 was 0.49. The predictors that emerged significant in descending order of contribution were Active Recreation Orientation (β=-0.37), Confrontive Coping (β=0.23), Organization (β=-0.33) and Cohesion (β=0.29).

Table 48 e shows Regression Equation for Healthy Group (n=60). For the criterion variable of GHQ R^2 was 0.35. The predictors that emerged significant in descending order of contribution were Organization (β=-0.52), Perceived Social Support (β=-0.28) and Conflict (β=-0.26).

Table 49 a shows Regression Equation for male adolescents in Total Disorder Group (n=120). For the criterion variable of GHQ R^2 was 0.33. The
predictors that emerged significant in descending order of contribution were Self Esteem ($\beta=-0.46$), Neuroticism ($\beta=0.19$) and Self Controlling ($\beta=0.17$).

Table 49 b shows Regression Equation for female adolescents in Total Disorder Group ($n=120$). For the criterion variable of GHQ $R^2$ was 0.08. The predictors that emerged significant in descending order of contribution were Achievement Orientation ($\beta=-0.30$), Escape Avoidance ($\beta=0.35$) and Expression ($\beta=-0.29$).