The psycho-physiological unity is overwhelmingly pronounced in human health. The impact of stress and other emotional practices is interwoven in so many ways in terms of appearance and feelings. However, the pressures of daily life press us everyday, pushing us ferociously to not just compete with others, but achieve standards of excellence, that at times only commensurate with unrealistic expectations either in personal or professional life. The segment of population where this problem of stress is most rampant is the young generation. One manifestation of stress is skin disorders. Skin disorders in the form of Acne, Eczema, and Psoriasis are the commonly found disorders among adolescents. Probably, their concern for fairness, looks and beauty enhances is even more.

Skin disorder is like a visible chronic problem which many a times affects the self esteem and confidence of the sufferer. The skin is a major organ of communication, being the primary contact between the organism and the environment. Abnormalities of the skin’s appearance due to skin disorders may produce rejection by community members; specifically chronic dermatitis is evident in exposed areas. The consequence of this “impaired appearance” generally leads to depression and low self esteem and poor self image (Gupta et al., 1996). This is the main reason why patients with dermatoses are so often psychologically disturbed. Many studies report the importance of emotions (Gaudencio, 2004), unconscious conflicts, personality traits (Gupta et al., 1996) anxiety or stressful life events (Harvima et al., 1996) in dermatological diseases. Adolescents suffering from dermatological problems may suffer from many social and emotional consequences. Many a times it gives rise to negative emotions such as fear, anger, frustration, aggression etc. On the other hand the youth who are free from any kind of skin problem experience positive emotions such as joy, happiness etc. Depression and anxiety could increase in an individual suffering from any kind of skin disorder. Acne could be a contributing factor to depression and anxiety. This could be modulated by negative self image, lower self esteem and impaired
socialization. Therefore, there is an imperative need to focus on this particular arena. Skin disorders may cause facial disfigurement at times affecting person’s physical appearance. Coupled with this is the problem that onlookers often associate skin problems with poor hygiene or contagiousness (Gupta et al., 1996).

In view of Bor and Papadopoulos (1999) skin disease brings on a variety of life changes and challenges that we may not be prepared to deal with. However, unlike other conditions which do not change the way people look, skin problems raise a whole new set of challenges because of their visibility. The visibility of certain conditions may attract attention in social situations, thus making the individual feel that they can't keep their condition private or personal. Furthermore, owing to a lack of health education and awareness in dermatology, some people associate skin disease with contagion or lack of hygiene. This ignorance regarding skin conditions means that a skin disease patient may find that some people react negatively towards them or treat them differently because of the way that they look. In many cases the physical changes that may result from skin disease can have a negative effect on body image. Body image is our perception of the way that others see us, and therefore any sudden changes to the way that we look will have an affect on our body image.

Folks (2001) reported that the ways in which the skin can react to many different stimuli, both physiological and psychological highlight the complexity of the relationship between the skin, external and internal factors. Unlike most internal illnesses, skin disorders are often immediately visible to others and therefore people suffering from dermatological conditions may suffer from social and emotional consequences. Most skin disorders are accompanied by pain and discomfort. It may be little difficult to assess the differential and combined effects of the physiological and psychological aspects of the condition on an individual’s quality of life and self esteem. Skin disorders are more often than not accompanied by changes in the person’s physical appearance and these changes are often obvious to others.

According to Walker et al., (2005), skin problems may be evident to others because they affect and alter physical appearance. The consequences
of this are twofold. Firstly, the visibility or prominence of the disease may attract attention in social situations, thus preventing the person from keeping a skin condition private or personal. Furthermore, some people associate skin disease with contagion or lack of hygiene, and therefore sufferers may also find that others react negatively towards them, or treat them differently because of their appearance. Secondly, the physical changes that may result from skin disease can have a negative effect on a person's body image, and high levels of psychological morbidity are often associated with this. The person may thus feel stigmatized and avoid certain social situations. Those who suffer from dermatological conditions have been found to experience higher levels of distress and anxiety, reduced self-esteem and body image.

Papadopoulos et al., (2005) reported that because skin diseases are often visible to others, sufferers may be more prone to the social and emotional consequences of their condition. However, psychological factors are sometimes overlooked or ignored by health practitioners because most skin problems are not regarded as serious or life threatening, even though non-life threatening skin conditions (such as acne) can adversely affect a person's well-being and self-esteem. Dermatological problems are often not recognized as a handicap in the general population and people with skin conditions may also suffer the added problem of trivialization of their distress, which can further exacerbate the intensity or seriousness of feelings associated with their conditions.

The psychological burden associated with skin disorders was described years ago by Schulzberger and Ziadens (1948) and Ahmed et al., (2007) ‘There is probably no single disorder /disease which causes more psychic trauma, more maladjustment between parents and children, more general insecurity and feeling of inferiority and greater sums of psychic suffering than a Skin disorder.’

In view of Mohammad et al., (2009) the skin has been referred to as the organ of expression, and as the largest and most superficial organ of the body, it serves as the major boundary between ourselves and the outside world. It acts as the surface of contact between us and our environment. It defines our limits and often provides a window to internal somatic and
psychological processes. Its capacity to react to physical and psychological stimuli (e.g. a rash from infection or blushing when we are shy or embarrassed) suggests that it is a complex organ, which affects and is affected by both physical and psychological stimuli.

Grossbart (2010) reported that the psyche - skin conversation goes both ways. Just as signals of psychological and emotional stress can lead to skin disorders, skin disorders often lead to psychological distress. The severity of this psychosocial toll is only weakly related to the severity of the skin disorder. Someone with mild symptoms may suffer worse psychologically than someone with severe symptoms. It all depends on the perception of the individual. According to Nestle et al., (2010) the skin, as the primary interface between the body and the environment, provides a first line of defense against microbial pathogens and physical and chemical insults.

Skin disorders thus lead to severe psychosocial problems meriting attention and focus. Stress and other negative emotions have been known to be involved in these disorders. As skin causes shame and embarrassment besides pain and discomfort, it becomes increasingly important to study the dynamics of skin disorders. The present study focused on the psychological profile of adolescents with different types of skin disorders viz Acne, Eczema and Psoriasis.

Types of Skin Disorders

1. ACNE VULGARIS: Acne vulgaris is a chronic inflammatory disease of the pilosebaceous follicles, characterized by comedones, papules, pustules, nodules, and cysts. It affects the areas of skin with the densest population of sebaceous follicles; these areas include the face, neck, the upper part of the chest, and the back, upper arm. Ninety percent of all teenagers may be affected with acne to some degree. It may begin in the twenties or thirties. As a rule, there is involution of the disease before age 25. It can persist throughout adulthood in 12% of women older than 25 years and 3% of persons aged 35 to 44 years. Although not life-threatening acne markedly influences quality of life and constitutes a socioeconomic
problem. Not less than 15-30% of acne patients require medical treatment due to the severity of their clinical condition (Zakaria et al., 2010).

Psychological factors causing acne include stress, anxiety, depression.

A recent study by Green and Sinclair (2001) conducted on 215 graduating medical students showed that 67% of students believed that stress plays a role in exacerbations. Moreover 74% of patients with acne and their relatives also believed anxiety was an exacerbating factor in the disease (Rosmussen and Smith, 1983). Increased numbers of studies (Palmblad, 1987 and Spiegel et al., 1989) support the pathogenic link between chronic stress and exacerbation of disease.

According to Slice et al., (2001) the primary concern of patients with acne is appearance. Previous quantitative studies have focused on the psychological sequelae of acne (eg. anxiety, depression, embarrassment, shame) without considering the factors that attenuate these effects.

Magin et al., (2006) maintained that embarrassment, self-consciousness, frustration, and anger are, compared with clinical depression and anxiety disorders, straightforward constructs easily linked with a single precipitant-in this case, acne. The temporal association of acne (or at least the mechanisms of being on show, being scrutinized, and being judged or taunted) and these evanescent emotional reactions is close, unlike the association of mediating mechanisms and pervasive psychiatric conditions, such as depression and anxiety.

Patiyil et al., (2006) reported that acne has a demonstrable association with depression and anxiety it effects personality, emotions, self image and esteem, feelings of social isolation, and the ability to form relationships. Its substantial influence is likely related to its typical appearance on the face and would help explain the increased unemployment rate of adults with acne.

Magin et al., (2006) found that depression is more prevalent among patients with acne than among control subjects. Other uncontrolled studies have found rates of depression higher among those with acne than is the
norm. Both controlled and uncontrolled studies have established that anxiety frequently accompanies acne. Overall psychiatric morbidity, as measured by the GHQ and other instruments, has been found in controlled studies to be higher among those with acne, and in uncontrolled studies’ to be seemingly high or to correlate with severity of acne Depressio anxiety, and overall psychiatric morbidity have been found to improve when acne is treated (especially with isotretinoin therapy).

According to Yosipovitch et al., (2007) acne vulgaris is a very common disease in adolescents, affecting over 90% of males and 80% of females in all ethnic groups. Acne significantly affects physical and psychosocial well-being. The pathogenesis of acne vulgaris is multifactorial, with hormones, sebum production and bacterial colonization playing major roles. Psychological stress has also been identified amongst factors that exacerbate acne. In a recent survey among 215 sixth-year medical students, 67% of the students identified stress as the cause of their acne. Moreover, several studies have shown that psychological stress can alter the immune functions of the skin and cutaneous barrier function.

Despite the apparent link between stress and exacerbation of acne vulgaris, there has been little research to elucidate the mechanisms behind this relationship; specifically whether the perceived association between stress and acne exacerbation is due to increased sebum production.

The psychosocial effect of acne was first recognized in 1948, when Sulzberger and Zaidens wrote. There is no single disease which causes more psychic trauma and more maladjustment between parents and children, more general insecurity and feelings of inferiority, and greater sums of psychic assessment than does acne vulgaris (Basavaraj et al., 2010).

Acne vulgaris is a distressing skin condition which can carry with it significant psychological disability. Patients with acne are more likely to experience anger and at increased risk of depression, anxiety and suicidal ideation (Abulnaza, 2009). He suspected that in acne increased risk of psychological sequelae would be low levels of certain nutrients, which can further increase that risk. Prospective trials, which evaluate mood and
emotions and yet are also inclusive of nutritional assessments and related blood markers, would help to shed light on the complex relationships between diet, the risk of acne and its individual mental health consequences.

2. **PSORIASIS:** Psoriasis is an inflammatory/autoimmune disease which is chronic in nature. It is a skin disorder characterized, most commonly by coalescing dry patches with erythema, covered by grayish white scales. Both environment and genetic factors lead to the expression of the disorder. Early onset of psoriasis before age of 30 predicts greater disease severity with a higher percentage of body surface involvement and a worse prognosis. Family history is also more common in early onset cases (Bowcock, 2005).

Koven (2002) opined that psoriasis is a relatively common, chronic, inflammatory and hyper proliferative skin disease that occasionally requires systemic therapy. It affects 1.4% to 2.0% of the population and comprises 2.6% of skin-related visits to primary care physicians, or between 0.3% and 0.6% of all visits to family physicians. Though not life threatening itself, psoriasis can have a substantial effect on patients’ lives and can greatly increase the risk of suicide. Patients are often most troubled by the itching and scratching, bleeding, unsightly physical appearance, and noticeable flakes. The degree of purities in patients with psoriasis and atopic dermatitis is strongly correlated to depressive psychopathology. Patients with psoriasis cannot cosmetically conceal their lesions, often relying upon seasonally inappropriate, attention drawing inappropriate, attention-drawing clothing instead, in a study by Rapp et al. both physical and mental functioning were reduced in patients with psoriasis comparable to that in arthritis, cancer, depression, and heart disease patients. In a study of 369 patients with psoriasis, 35% reported that their condition affected their careers; 20% reported that they were substantially impaired in performing their work.

According to Russo et al., (2004) psoriasis is a chronic, genetically influenced and immunologically based inflammatory disease of the skin. It is important for clinicians to be aware that psoriasis can have a substantial emotional impact on the individual which is not necessarily related to the
extent of the skin disease. It has long been recognized that living with a chronic condition, such as psoriasis, can have a considerable impact on the individual concerned. In turn there is an increased understanding that psychological distress encountered as a result of this experience can have implications for the course of the disease. The role of stress in the onset of, and as a trigger for, exacerbation of psoriasis has been debated for many years. Life stresses have been ascribed as both a cause of psoriasis and as an aggravating factor in the disease (Gupta and Gupta, 1996). Psoriasis is associated with a variety of psychological problems, including poor self-esteem, sexual dysfunction, anxiety, depression and suicidal ideation. The clinical severity of psoriasis may not reflect the degree of emotional impact of the disease. Psoriasis of early onset has been associated with a greater genetic susceptibility and a more severe and recurrent course, while psoriasis of late onset has no determined genetic component and is therefore considered to be more reactive, i.e. susceptible to environmental factors.

Poot et al., (2007) reported that psoriasis is a disfiguring and stigmatizing skin disease, the course of which is punctuated by exacerbations and remissions. It is associated with problems in body image and self-esteem and feelings of stigma and shame. Therefore, the recognition and management of psychological factors have become part of dermatological practice. Many psoriatic patients have to deal on a daily basis with shame, guilt, anger and fear of being thought by others as dirty and infectious. As the increased levels of stress, anxiety, depression, and anger experienced by patients with psoriasis may be both caused by their condition and exacerbate it, it was interesting to compare some of the psychological characteristics in psoriatic patients and comparative group.

Psoriasis is a chronic skin disease associated with problems in body image and self-esteem and feelings of stigma and shame. Kotrulja et al., (2010) conducted a study. The aim of the study was to analyse the clinical extent of psoriasis and its association with psychological distress, and to compare the psychopathological traits in early-onset (type I: age of onset < 40 years) vs. late-onset (type II: age of onset > 40 years) psoriasis A total of 140 patients participated in the study 70 patients with confirmed diagnosis of
psoriasis vulgaris and 70 patients as a comparative group. A battery of psychological instruments was used together with an Inventory of life stress events. The severity of psoriasis was assessed by standardized Psoriasis Area and Severity Index measure. The Psoriasis Life Stress Inventory showed the significant correlation with clinical extent of psoriasis and other measures of psychological distress. Patients with late-onset psoriasis had more prominent symptoms of depression compared with the group with early-onset psoriasis and the comparative group. The results of the Minnesota Multiphasic Personality Inventory-201 for the patient group with late-onset psoriasis showed a specific configuration of neurotic triad.

In view of Basavaraj et al., (2010) Psoriasis is a relatively common, chronic and inflammatory and hyperproliferative skin disease that occasionally requires systemic therapy. Stress has long been reported to trigger psoriasis. Psoriasis is associated with a variety of psychological difficulties, including poor self-esteem, sexual dysfunction, anxiety, depression and suicidal ideation.

According to Salomon (2011), Psoriasis is one of the most common chronic skin disorders. It usually markedly influences many aspects (social, occupational, sexual and even financial) of a patient's life. In recent years there has been increasing interest in quality of life (QoL), stress and depression in patients with psoriasis. However, data concerning the experience of Stigmatization in people with psoriasis are limited.

3. ECZEMA: Atopic dermatitis or eczema is a chronic skin disorder characterized by pruritus and inflammation, which more often begins as an erythematous pruritic, maculopapular eruption. Analysis of atopic dermatitis in children indicate, even after controlling for demographic and medical status variables, that the measures of stress in the family environment are important predictors of symptom severity. Although genetic factors may underline the development of atopic dermatitis, environment factors are likely to trigger or exacerbate the disease. One half to two thirds of eczema patients report psychological stress to be the principle aggravating factor in this disease (Morren et al., 2001).
In a study conducted by Balakrishnan (2003), it was found that atopic dermatitis (AD) is a chronic skin condition of both children and adults and may affect 5-20% of children up to 11 years of age at one time or another in India. This disease has significant quality of life (QOL) and economic consequences, which are not limited to the patient, but extend to the entire family unit. As one of the most common skin conditions of childhood, AD has been associated with lowered QOL in children as well as family members. AD in children can disrupt family and social relationships, in addition to interfering with recreational activities and school. Parents have reported both high stress related to treating and taking care of the child with AD and feelings of helplessness regarding the child's symptoms. In a German study comparing infants with AD to normal infants, mothers of infants with AD showed more anxious and overprotective attitudes when surveyed. In addition, the burden of caring for the child with AD can negatively affect spousal relationships and interfere with giving adequate attention to siblings. It has even been proposed that the decreased quantity and quality of maternal touching may affect the child's development, leading to behavioural problems and worsened AD because of life stress.

According to Weinstein (2009), atopic dermatitis (AD) or eczema is a chronic, relapsing skin condition that can lead to psoriases, pruritus, and patches of dermatitis. Coping with the physical and emotional aspects of AD can significantly impact the quality of life. It is most common in childhood, as many patients seem to outgrow the condition by adulthood. The etiology of AD is complex and not fully understood, but contributing factors include a dysfunctional skin barrier that allows moisture to escape and irritants to enter, as well as inflammatory mediators. There is increasing interest in exploring the feasibility and efficacy of using non-drug alternatives as adjuncts to conventional pharmacologic approaches. Lifestyle modifications can aid in AD management.

Rashmi et al., (2010), reported that the onset or exacerbation of eczema often follows stressful life events. Symptom severity has been attributed to interpersonal and family stress, and problems in psychosocial adjustment and low self-esteem have been frequently noted. Adults with
atopic dermatitis are more anxious and depressed compared with clinical and healthy control groups. Children with atopic dermatitis have higher levels of emotional distress and more behavioral problems than healthy children or children with minor skin problems.

According to Potter (2011), Atopic eczema is an inflammatory disorder of the skin characterised by pruritis, a typical distribution of eczematous skin lesions, a chronic relapsing course, and a personal or family history of atopic disease. The disease often begins early in infancy.

Other types of skin disorders are viz: Urticaria, Pruritus and Alopecia Areata

1. URTICARIA: Also called ‘hives’ is characterized by a “wheal and flare” response, circumscribed, raised, erythematous, usually pruritic areas of edema that involve the superficial dermis. Early dynamic theories about urticaria have been abandoned with no proven association between personality conflicts, but studies have consistently shown anxiety and depression among urticaria sufferers (Badoux and Levy, 2000).

2. PRURITUS: It is a common sensation found in conjunction with several of the dermatoses. The current literature suggests that virtually all forms of itching, whatever the cause, may be intensified by emotional stress. Pruritus or itching may arise from systemic disease such as renal, hepatic, endocrine disease, neurologic or malignant neoplasm. Drug toxicity and infections with parasites or viruses are also found to be associated with pruritus. Stressful life events may co-relate with an increased ability to detect itching (Shaw et al., 2007).

3. ALOPECIA AREATA: It is non scarring hair loss in patches of typically well demarcated smooth skin with breakage of the hair shaft that results in characteristic “exclamation mark hairs”. Hair loss often involves the scalp, but may also affect the brows, lashes, beard and body hair and varies from a single patch to multiple patches or total hair loss. Patients with alopecia areata may be vulnerable to psychiatric sequelea related to hair loss. They may also exhibit psychiatric symptoms if they feel overwhelmed or unable to cope with the perception of rejection from others (Folks et al., 2001).
Prevalence of Skin Disorders

Skin disease is also the most frequent reason for sick leave from work and is the most common industrial disease (Gawkrodger, 2000). Yet, in a society where there is so much emphasis placed on looks and appearance, there seems to be little attention given to the psychological effects of skin conditions and the challenges faced by those who suffer from them. From dealing with staring and rude comments to thinking about how to ask the doctor for a referral, people may experience different challenges when living with their skin condition. Unfortunately however, since skin diseases are rarely life-threatening, their impact is often minimised both by family members and by health professionals. As a consequence, a person may feel that they aren’t allowed to be upset or even to take time out to cope with their condition.

Skin disease is very common among children and young people. For example, up to 20% of young children develop eczema and the majority of young people develop some symptoms of acne temporarily during adolescence (Smithard et al., 2001). However, there is surprisingly little research on the psychological impact of skin disease in childhood and the focus of most research in pediatric psychology has been on life-threatening conditions, such as cancer. Despite the lack of research, there is widespread acknowledgement of the impact of skin disease on the psychological wellbeing and quality of life of children, and increasing awareness of the importance of understanding the psychological impact of skin disorders on children and their families.

In a study from South India done to evaluate the pattern of dermatoses in children, psoriasis accounted for 1.4% of the total skin patients presenting in an outpatient department of a hospital over a period of one year Karthikeyan et al., (2004). In India, largest series on childhood psoriasis was reported by Kumar et al., (2004). They presented data of 419 children with psoriasis. Children accounted for 12.5% of total psoriasis patients over a period of 13 years. Age of onset ranged from 4 days to 14 years, male and female incidence was equal.
Introduction

In a study on adolescents with Eczema in South India Gangopadhyay et al., (2006) reported that only 0.01% (3 out of 2100) adolescents in South India had eczema.

Kubba et al., (2009) reported that in India; prevalence data from a dermatology clinic in a teaching hospital in Varanasi reported acne in 50.6% of boys and 38.13% of girls in the age group 12-17 years. There are believed to be no gender differences in acne prevalence, although such difference are often reported and, very likely, represent social biases. In clinics in the urban areas, there is a clear preponderance of girls seeking treatment.

The aim of a study conducted by Thappa and Adityan (2009) was to study the profile of acne vulgaris and its seasonal variation. All patients with acne vulgaris who consented to participate in the study were included. The parameters evaluated included age, gender, age of onset, duration of lesions, site of lesions, grade, relation with menstrual cycle, markers of androgenicity, number of acne lesions such as comedones, papules pustules and nodules, number and site of post-acne scarring, post-acne hyperpigmentation and seasonal variation. Results indicated that of the 28,917 new patients who attended the dermatology OPD during the study period, 309 patients had acne vulgaris and the frequency was 1.068%. Of the 309 patients, 137 (44.3%) were females and 172 (55.7%) were males. Male to female ratio was 1.2:1. The age of the patients varied from 13 to 45 years with the mean of 19.78 years (SD ± 4.94). The most common age groups to be involved in acne vulgaris were 16-20 years (185 cases, 59.8%) and 21-25 years (60 cases, 19.4%). The researchers found that there were gender differences in this age group.

In a study from North India, Dogra and Yadav (2010) reported the prevalence of psoriasis to be 0.8% among the skin patients but the sample size of the study was very small. Male to female sex ratio was 2:1. In this study, it was observed that females had lower mean age of onset compared to males. In a latter study by Dogra et al., (2010) which included larger number (530) of subjects, prevalence of psoriasis among dermatology outpatients was found to be 2.8% while male to female ratio to be the same.
An Indian study by Vijayan et al., (2010) reported that the onset of psoriasis was maximum between 20 – 40 years and its prevalence was 1.4%. Depression was the most common triggering factor seen in 40% of patients, alcohol in 21%, smoking in 12% and psychosis in 1% of the patients. The prevalence of psoriasis in various other studies were 1.3%, 1.43%, 1.5%.

A rising trend in eczema has been observed in India in the last four decades. A study by Kanwar et al., (2011) reported an incidence of 0.38% of the total number of outpatient attendees. Relatively recent hospital-based studies have also determined a low prevalence both in the Northern and Eastern part of the country, the reported prevalence among dermatology outpatient department attendees being 0.42% and 0.55%. However, eczema was the commonest dermatosis in children registered to a pediatric dermatology clinic where it constituted 28.46% of all registered patients.

Seeing a large prevalence rate of skin disorders among adolescents and in view of severe adverse psychological impact of skin disorders, the present study focused on adolescents.

Models/Theories of Skin Disorders

(i) The Biopsychosocial Model

Until recently, skin disease was predominantly studied from a biomedical perspective, an approach founded on the belief that physical and mental aspects of health are mostly separate. The biomedical model takes a mechanistic view of the body, conceiving illness as an agent which disrupts normal functioning, and defining health merely as the absence of disease.

![Biopsychosocial Model Diagram]


By emphasizing illness over health, the biomedical model focuses on anomalies that lead to illness rather than on conditions that may promote health. It is a reductionist theory, which tends to ignore the complexity of
factors involved in health and illness, not recognizing the role of more general social and psychological variables.

The biomedical model has historically dominated medicine, maintaining that illness can be explained in terms of aberrant somatic processes. It assumes a mind-body dualism, maintaining that the two are independent entities (Engel, 1977). While it works well when applied to conditions resulting from specific pathogens or infectious diseases, it is of only limited use when taking into account the inter-play between biological, psychological and social factors which relate to the cause, course and treatment of some skin conditions. For example, when the dry, pink lesions of psoriasis are successfully treated by a course of steroids, the cause-effect biomedical model can readily be applied to understand the change process. However, if these patches appear only when the patient suffers emotional stress, which in turn affects his sexual relationship with his partner, and which when treated with steroids responds as well as when treated with relaxation exercises, we need a more complex model to help us to understand so-called causes and effects.

Each of these ideas lends support to the application and viability of the biopsychosocial approach and a strong mind-body connection in dermatology. The connection between the two appears to have several functions:

- The skin not only plays an important role in tactile reception, but also responds perceptibly to emotional stimuli. Therefore skin disease may also affect tactile communication, sexual interaction and social relationships.
- Another important link between the dermis and psychosomatics is that skin disease may signal internal pathogenic processes. For example, the diagnosis of meningococcal meningitis is often made by looking for the petechial or purpuric rash which erupts on the skin.
- Anxiety and blushing also manifest in the form of changes in the colour or texture of the skin. The skin is metaphorically a door to physical and psychological problems and processes.
On the other hand, the biopsychosocial model of health and illness takes into account factors such as social support and psychological stress, as well as factors relating to physiological disorders or the presence of viruses. It therefore acknowledges that health and illness result from a range of factors and produce a variety of effects. Indeed, it maintains that body and mind cannot be separated in relation to health since both influence a person's health status. In cases where the illness worsens, factors such as anxiety, impaired social support, and traumatic life events have been found to be relevant. In situations where there is a stabilization or improvement in the condition, factors such as strengthened social support, improved self-esteem and enhanced self-efficacy are also thought to play a role (Kleinman, 1988). Multiple systems interact simultaneously to bring about conditions of health and illness. A system can be defined as a group of interacting or interdependent elements that form a unified whole (Bor and Papadopoulos, 1999). A 'systems' approach maintains that levels of organization within a
system are linked and that change in any one level will effect change in others. It implies a perspective that differs from one in which biological, psychological and social factors are accounted for separately when considering illness. In the biopsychosocial approach, the system has emergent properties not predictable from the properties of the separate elements.

### Source

(ii) The Pschophysiological approach to skin disorders

There several theories which postulate psychophysiological mechanisms underlying various cutaneous diseases (Salzer and Schallreuter, 1995). In order to understand how the skin can be conceptualized from this perspective however, some general points need to be outlined:

- Both the skin and the central nervous system develop embryologically out of the ectoderm. The central nervous system (CNS) derives from a specialized portion of the ectoderm known as the neural plate. Thus theoretically, if the two share their embryonic origin then they may be further connected in terms of their functioning.
Introduction

- Both the skin cells and certain nerve cells metabolize the amino acid tyrosine to produce either melanin or catecholamines respectively. It has been suggested that translation errors during this process may account for some of the acquired hypomelanotic disorders commonly observed (Ortonne et al., 1983).
- Apart from the dermal melanocytes, melanin-producing cells exist in other parts of the body; for example, melanin is present in the brain in the substantia nigra. The fact that melanin is present in the brain prompts the suggestion that it might have biological functions other than photo-protection. Indeed, it has been shown that both naturally-occurring and drug-induced dyskinesia occurs only in species which possess melanin in the substantia nigra suggesting that melanin may have a more fundamental biological role than that of providing visible pigment.
- There also appears to be a relationship between the skin and the immune system. Both serve the same function, but in different ways, by protecting the body from infection. Clinical studies have shown that psychological stress can cause the suppression of killer T-cells and macrophages, both of which have been shown to play important roles in skin-related immune reactions.

At a biological level, many conditions are genetically linked. Having a dose relative with a disorder and sharing their genetic make-up might increase the risk for a particular disorder. On a psychological level, a person's cognitive set, the way he/she perceives the world, may predispose them to certain illnesses. For example, a chronic feeling of hopelessness may predispose an individual to developing depression.

Each of these observations reinforces the idea that skin problems are by no means a simple physiological occurrence. Rather they are the product of an interplay between various complex systems including those of a psychosocial nature, many of which we have yet to fully understand.
(iii) Additional Theoretical models regarding of the psychological impact of skin disorders during childhood

Most theoretical models of child and family adaptation to chronic illness use a stress and coping model adapted from Lazarus and Folkman (1984) to explain the impact of a chronic illness on children and their families. For example, Wallander and Varni’s (1998) model predicts that disease-related variables (such as severity or visibility), functional independence and psychosocial stressors can be seen as risk factors, whereas intrapersonal factors (such as coping style), social-ecological factors and stress processing are all seen as resistance factors.

However, most of the research studies to date have been cross-sectional, descriptive studies. Unfortunately, these research designs may not capture the complexity of the processes that may be involved, particularly when trying to understand relationships between people and causal processes. For example, the reciprocal relationship between a mother and her child, particularly when it involves both the mother and child’s psychological and physical state, is a very complex one and has sometimes been oversimplified. It is not possible to disentangle the direction of causality in a cross-sectional study and this means that a degree of caution is required when interpreting many studies. A biopsychosocial model, such as the one described by Hewlett (1999), which takes into account the influences that biological, social and psychological factors have on both the child and his or her carer, and the possibility of reciprocal causal patterns is the most useful way of trying to understand the interrelationship of these factors.

According to Chuh et al., (2003) the exact nature of the risk factors that are important predictors of which children adjust well to their condition and which children do develop psychological difficulties are not well understood. Whilst intuitively, severity of the condition would seem to be a good predictor, this is not always supported by research. The very concept of severity is quite a complex one - some conditions are considered ‘severe’ because they are life threatening, such as cancer, whilst others may not be life threatening but do have a big impact on quality of life and are therefore severe in a different way. Skin conditions are rarely severe in the sense of life
threatening in children. However, they often have a very big impact on the child’s quality of life and that of his or her family, and may be seen as severe in terms of the impact on day-to-day life. It has become clear that there is no simple relationship between the severity of a condition as assessed objectively by a clinician and psychological adjustment.

The visibility of the child’s condition is also thought to have an impact on the child’s adjustment to their condition. Many skin conditions are immediately apparent to other people and children, and their families have to manage the reaction of other people to the child’s condition on a daily basis. Papadopoulos et al., (2000) compared the impact of acne which was mainly on a young person’s body with acne mostly on the face, and showed that the visible, facial acne sufferers had lower self-esteem and that their body image was more affected than if it was on their body.

Thompson and Kent (2001) reported that within the psychodermatological literature, there is a great degree of consensus that skin disorders have a negative impact upon the psychological and emotional functioning of some patients. Indeed, research has provided evidence that such appearance-altering diseases can have profound behavioural, emotional and cognitive impact upon sufferers.

Etiology of Skin Disorders

- Biological factors affecting skin disorders
- Psychological factors affecting skin disorders

Biological factors affecting skin disorders

Role of heredity in skin disorders

According to Epstein (2001) genetic factors play an important role in the diagnosis and the onset of a skin problem. It is a known fact that parents who had severe acne in their teens are justifiably concerned that their offspring will also undergo a siege of acne.
A study conducted by Dhar and Banerjee (2010) showed personal or family history of eczema in 130 children. The study highlights that the figures of personal/family history in eczema was high. The researchers reported that high incidence of family history produces a more severe form of the disease.

Other biological factors playing a role in skin disorders

According to Epstein (2001) the skin is a complex active organ, if any of its functions fail there can be serious consequences. The skin’s ability to act as a barrier is particularly important for occupational health.

One way to understand the barrier function of the stratum corneum is to consider it as a brick wall. The corneocytes (made of tough protein) form the bricks and between these a double layer of lipids (fatty materials) and water make up the mortar. Some lipids have a hard crystal-like structure and are impermeable to water. Others lipids do not have this structure and they allow water to percolate through. So, the barrier is semi-permeable.


The elasticity, firmness and correct functioning of the stratum corneum depends on its moisture content. Retention of water is aided by substances in
the skin called natural moisturising factors (NMFs). If the moisture content is too high or too low, it can affect the skin’s barrier properties.

If the skin becomes overhydrated, for example from prolonged contact with water or from wearing gloves that prevent sweat from evaporating, it causes NMF production to stop.

If the skin dehydrates, for example in an air-conditioned environment with low humidity, the corneocytes are not shed as normal and the skin becomes rough, thickened and flakey, eventually leading to cracking because of loss of elasticity.

The ‘surface film’ on the epidermis also acts as a barrier, to prevent bacteria and other contaminants from penetrating the skin. The film is slightly acidic and can help to neutralise the contaminants that are typically alkaline in nature. Excessive use of harsh alkaline soaps can destroy the acidity of the film and hence the protection it offers.

Problems occur when the skin’s barrier is breached. This can happen when:

- A material/agent penetrates the barrier layer or alters it so other materials/agents can penetrate it;
- A material/agent alters the tissue under the barrier layer or allows other materials/agents to penetrate the skin and cause alterations;
- A material/agent enters sweat ducts or hair follicles, by-passing the barrier layer.

Source: Common Skin Disorders, Ed. (5), (Ernst Epstein, 2001)

Causes of Acne

According to Simpson and Cunliffe (2009) three general mechanisms have been put forward as causing acne: (i) excessive sebum production or seborrhea; (ii) abnormal shedding of the epithelial cells that line the follicles; (iii) a bacterium often initiated by the hormonal increases of adolescent known as propionibacterium acnes, which proliferates in the follicles as a consequence of the increased sebum.
Causes of Psoriasis

According to Simpson and Cunliffe (2009) the exact cause of psoriasis is not fully understood, the basic abnormality is thought to be immunologically based, perhaps autoimmune, and is associated with an enlarged population of epidermal cells that divide too rapidly. The epidermal cell proliferation is increased by 20 times or more in psoriatic as compared to normal skin.

Causes of Eczema

According to Simpson and Cunliffe (2009) there is a genetic component to the condition with around 70% of patients having a family history of eczema, asthma or hay fever. The cause is thought to be related to an imbalance in immune function, including defective T-cell function, and is probably essentially a form or allergic response to environmental substances such as house dust or pityrosporum yeast present in the skin.

Psychological factors in skin disorders

Psychological factors such as emotions, stress, anxiety, depression, body image, self esteem and quality of life have an adverse effect on the patient with a skin problem.

Emotional Factors

Recent dermatologic literature reveals increasing emphasis on the role of emotional conflict in the exacerbation, as well as the causation, of skin disturbances. A study conducted by Allerhand et al., (1999) was primarily concerned with an investigation of psychologic and attitudinal traits which appeared to bear a close relationship to certain skin disorders. The results revealed that there has been a growing interest in the psychologic factors related to dermatologic problems. Several trait clusters were established which seemed to characterize neurodermatitis patients as distinguished from patients with other skin conditions and from general medical patients.
Bahmer et al., (2004) maintained that emotional factors play a role in the development and course of many chronic skin diseases. Over the last few years, evidence has increasingly accumulated to suggest that the human neuroendocrine network might be influenced by emotional stress. It has been shown that emotional stressors, such as life-events or daily stressors, profoundly influence immunological function. Beside genetic predisposition factors in atopic dermatitis and psoriasis, stress is regarded as an antecedent of the onset and maintenance of skin diseases. Specifically, environmental factors and emotional disturbances can be regarded as stressors. The level of social support and the method of coping play an additional role in the severity and course of chronic skin diseases.

In view of Malhotra and Mehta (2008), the possibility of causal influence of emotional stress, especially of stressful life events on the course of various skin disorders has been established. Stress effects several skin disorders such as acne, psoriasis, urticaria, pruritus, alopecia areata and eczema. It acts as a precipitating factor in the onset or exacerbation of skin disorders through psychosomatic mechanisms.

According to Basavaraj et al., (2010) skin is an organ that has a primary function in tactile receptivity and reacts directly upon emotional stimuli. Dermatological practice involves a psychosomatic dimension. A relationship between psychological factors and skin diseases has long been hypothesized. Psychodermatology addresses the interaction between mind and skin. It is divided into three categories according to the relationship between skin diseases and mental disorders.

Stress and Anxiety

Kent et al., (1995) reported that there has been an emphasis in the field of dermatology on the recognition that psychological health may affect the onset and progress of skin conditions, a detailed understanding of the links between psychological health and the onset and course of many cutaneous conditions is still not well established. It has been suggested that psychosomatic mechanisms precipitate skin disease in predisposed subjects.
Others have hypothesized that people suffering from psychological problems are likely to present to their dermatologist because of hypochondrias, delusions related to the appearance of the skin and self-mutilation. Still others have supported the view that the social stigma associated with disfiguring skin conditions might precipitate psychiatric disturbance in otherwise 'normal' subjects. There have also been suggestions that systemic diseases, such as lupus erythematosus, may produce both skin lesions and psychiatric disturbances.

Koo (1995) opined that stress has been indicated as a trigger in many dermatologic conditions, including atopic dermatitis, acne vulgaris, and chronic urticaria. With each of these conditions, one encounters both patients who experience a close chronologic association between stress and exacerbation of their skin disease, and patients for whom their emotional states seem to be unrelated to the natural course of their cutaneous disorder. These two groups are considered "stress responders" and "non-stress responders," respectively.

Skin conditions can give rise to a range of psychological problems in affected individuals. These include low self-esteem, social anxiety, altered self-concept and depression (Lansdown et al (1997)). In a study which sought to examine how peoples’ lives are affected by the onset of different skin conditions, researchers interviewed 100 people with acne, psoriasis or eczema who attended a hospital outpatient clinic (Jowett and Ryan, 1985). They found that patients' lives had been affected in several ways by their skin condition, including lowered self-esteem and difficulties in relationships, as well as reduced opportunities in finding employment, functional and interpersonal problems in the workplace, increased levels of anxiety, lack of self-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.

Koo et al., (2000) described the effect of emotional stress on Skin disorders as a psychophysiologic disorder. Recent research identifies upregulating pathways that link psychologic stress and chronic skin inflammation.
To some extent skin conditions are unique from many other diseases in so far as they are often visible to others, and as a result social factors associated with both appearance and illness are relevant to the adjustment process. There is no doubt that living with a chronic skin condition can be stigmatizing. As early as 1976 Jobling found that for psoriasis sufferers the greatest psychosocial impacts having the condition were interpersonal difficulties. It is now widely established that individuals with a disfiguring skin condition can suffer negative and intrusive reactions from others as well as experiencing interpersonal difficulties, such as in the formation of relationships (Kent, 2001).

Many studies point out complex, mutual relationships between psyche and skin. There is extensive literature on the relationship between emotional stress and skin diseases (Picardi and Abeni, 2001). Furthermore, dermatologists commonly think that psychiatric disorders are frequent in their patients (Gieler et al., 2001), and several studies confirm this opinion (Picardi et al., 2001). In addition to any causal mechanism linking psychiatric morbidity and dermatological diseases, it is important to consider the consequences of the interrelation between these two conditions. For example, psychiatric morbidity is associated with increased subjective perception of pruritus, is higher among patients whose skin condition does not improve with treatment, and may affect treatment adherence (Renzi et al., 2002).

Rumsey and Harcourt, (2004) maintained that a large number of people living with skin conditions adjust well to their condition; there is a risk for some of them experiencing social, psychological, and physical distress. In common with other chronic illnesses and appearance-altering conditions there appears to be no simple relationship between single biomedical and demographical factors, such as severity and age, and psychological adjustment.

According to Walker, (2005) stress has been shown to be an important contributory factor in conditions eczema and psoriasis. The way in which stress affects these conditions is thought to be a complex process which involves changes in the way children perceive their pain and itching, changes in the child's immune function and changes in inflammatory responses.
Hussain et al., (2005) maintained that acne is likely to be associated with anxiety and depression. The magnitude of this psychological upset is in turn influenced by severity, distribution, duration of disease and the extent of scarring. Different variables of life like age, sex, marital status and employment also affect the magnitude of acne associated anxiety and depression.

According to Hashizume et al., (2006) anxiety and active disease lead to a decline in the quality of life of patients with Skin Disorders, which most notably includes their quality of sleep. It alters the immune response in the skin, damages barrier function, and contributes to systemic dysregulation of the homeostatic neural, endocrine and immunologic pathways.

A research by Ryan and Jowett (2007) sought to quantify the handicapping effect of skin conditions in a far more rigorous way than had previously been attempted. One hundred people who had attended a hospital outpatient clinic during a specified period for treatment of their acne, psoriasis or eczema were interviewed in their homes. A comprehensive and structured interview schedule was used and interviewees were encouraged to talk at length about the impact that their skin conditions had had on their lives. Detailed data were collected that show the serious effect that these diseases can have in several domains. The findings record not only the physical discomfort and inconvenience sufferers may meet but also the consequences for their personal and social life and daily functioning. There was evidence from interviewee’s employment experiences of limited opportunities, and functional and interpersonal difficulties in the workplace. 64% of people said that their skin disease affected their socio-economic activity. The extent to which sufferers experienced embarrassment, anxiety, a lack of confidence and depression is documented. 40% of people felt that their social life was affected and there was evidence of particular stresses and demands in personal relationships.

The literature indicates that there are generally higher levels of psychological distress amongst people with skin problems; there is also evidence to suggest that there is considerable individual variation. Indeed, several studies have found that the psychosocial impact of living with a
chronic skin condition can be minimal. Bentovim and Walker (1995) studied body-related attitudes in a small sample of women with a range of disfiguring dermatological conditions and found that the women did not disparage their bodies to a greater extent than a matched control group.

**Body Image, Self Esteem and Quality of Life**

Irrespective of whether a dermatological condition is acquired from birth or later on in life, there is a period of psychological adjustment that the patient must go through in order to come to terms with their appearance. In the case of a traumatic disfigurement or the onset of a skin disease in adulthood, the person goes through a period of mourning for their ‘normal’ appearance (Partridge, 1995). As they adjust, they may experience feelings of shock, denial, anger and sadness, before coming to terms with their ‘new’ face or body. The person may be preoccupied with feelings of loss associated with an image of the person they could have been (Bradbury 1996).

There are a large number of studies that have shown that any form of physical illness during childhood increases the risk of psychological difficulties for the child (Wallander and Varni, 1998). There is also evidence from a few studies about the specific impact of a skin disorder on childhood psychological problems. For example, Absolon et al., (1997) found that children with eczema had higher rates of behavioural problems than healthy children.

Moore et al., (2000) reported that in psychological studies examining acne, psoriasis, vitiligo, and port wine stains, it is the physical disfigurement from an accidental burn, psoriasis, or a congenital port wine stain may result in responses ranging from sympathy to avoidance. These attitudes are based very much on physical appearance alone and draw little on the interpretation and judgment of one's behaviour.

In view of Smithard et al., (2001) rates of psychological difficulties are higher among young people with acne and up to a half of 12-20-year olds with acne have been shown to have psychological or social problems.

De Korte et al., (2002) reported that chronic skin diseases bring many changes to patients’ everyday life, causing a considerable mental discomfort.
Papadopoulos and Walker, (2003) reported that since many dermatological conditions are immediately visible to others, patients may have no choice as to whether or not they wish to disclose the fact that they have a skin condition to those around them. Other illnesses, which are less prominent, can remain private and personal matters until the patient chooses to disclose details about them. The dermatology patient may feel that this choice has been taken away from them and may resent the fact that their condition is visible to others.

Walker (2005) opined that negative reactions from others and a fear of such reactions is a challenge for people with skin problems. The "just world hypothesis" the idea that a person must somehow deserve his/her disfigurement as an appropriate punishment for previous transgressions together with the fear of contagion and uncertainty as to how to approach an individual with a visible difference can combine to make the experience of having a skin disorder deeply challenging. Very often people with skin disorders suffer from lack of autonomy. To understand the social and psychological experience of living with a skin disorder, it is essential for health professionals to understand patient’s cognitions and the ways in which they represent their illness and their sense of self.

Chaturvedi et al., (2005) maintained that dermatologic disorders generally have a major impact on patients' daily activities, psychologic and emotional state, and social relationships. The intensity of impact of skin disease on an individual person is extremely variable, however, and depends on natural history of the disorder; the patient's demographic characteristics, personality, character, and value; the patient's life situation; and the attitudes of society. Social stigma toward dermatologic disorders in the Indian society is quite widespread, especially toward leprosy. Dermatologists are expected to consider quality of life issues along with social aspects, nature of disorder, efficacy, and tolerability of various therapeutic options to optimize relief and comfort to their patient.

According to Picardi et al., (2006) skin plays a key role as a sensory organ in socialization processes through the entire life cycle. It is responsive to emotional stimuli and its appearance greatly influences body
image and self esteem. The relationship between psychological factors and skin disorders has long been hypothesized. There is a common opinion that many cases of skin disorders are caused by psychological stress, or are related to certain personality traits, or represent a complication of psychiatric disorder.

In view of Potocka et al., (2009) chronic skin diseases have been recognized as having a detrimental effect on patients’ quality of life, also causing considerable mental discomfort. Reduced self-acceptance, low self-esteem, a negative body image, and a low sense of self-worth have been noted in patients with visible skin disorders.

According to Tuderman, (2010) the human skin forms a large physical barrier between the organism and the environment. Diseases of the skin can have a severely negative effect on the quality and length of life of the persons affected.

**STATEMENT OF THE PROBLEM**

The main aim of the present study was to compare adolescents with and without skin disorders on psychological factors viz. Eysenckian dimensions of Personality, Health Locus of Control, State-Trait Anxiety, Self Esteem, Self Efficacy, Mental Health and its dimensions viz. Being Comfortable with Self, Being Comfortable with Others and Ability to meet Life Demands, dimensions of Stress viz. (Stress Symptoms, Perceived Stress, Daily Hassles and Uplifts), Coping, Anger (Anger Experienced and Anger Expression Styles, Perceived Parental Bonding, Perception of Family Environment, Dermatology Life Index and Family Dermatology Index.