PSYCHIATRIC MORBIDITY IN PATIENTS WITH NEURODERMATITIS AND TINEA VERSICOLOR - A COMPARATIVE STUDY

A DISSERTATION SUBMITTED IN PART FULFILLMENT OF THE REQUIREMENT FOR MD(PSYCHIATRY) BRANCH XVIII MARCH 2010

THE TAMILNADU Dr. M.G.R. MEDICAL UNIVERSITY, CHENNAI
TAMIL NADU.

PSYCHIATRIC MORBIDITY IN PATIENTS WITH NEURODERMATITIS AND TINEA VERSICOLOR - A COMPARATIVE STUDY

DISSERTATION SUBMITTED FOR THE
DEGREE OF MD(PSYCHIATRY)
BRANCH XVIII
MARCH 2010

THE TAMILNADU Dr. M.G.R. MEDICAL
UNIVERSITY, CHENNAI
TAMIL NADU.

CERTIFICATE

This is to certify that this Dissertation entitled **"PSYCHIATRIC MORBIDITY IN PATIENTS WITH NEURODERMATITIS AND TINEA VERISCOLOR – A COMPARATIVE STUDY"** presented herewith by Dr. G. AMUTHA to the faculty of Psychiatry, The Tamilnadu Dr. M.G.R. Medical University, Chennai in part fulfillment of the requirement for the award of M.D., Degree Branch XVIII [PSYCHIATRY] is a bonafide work carried out by her under my direct supervision and guidance.

Date :

Dr. S. NAGARAJ, M.D., D.P.M.,
Professor and Head,
Department of Psychiatry,
Madurai Medical College and
Govt. Rajaji Hospital, Madurai.

ACKNOWLEDGEMENT

I owe my deep sense of gratitude to **Prof. S. NAGARAJ,** Professor & Head, Department of Psychiatry, Madurai Medical College, and Govt. Rajaji Hospital for guiding me through all the stages of this thesis. work.

I am very greatful to **Dr. C.P. Rabindranath** and **Dr. V. Ramanujam**, Associate Professors, Department of Psychiatry, for their valuable suggestions throughout the study.

I thank the **Dean, Madurai Medical College, Madurai** for permitting me to utilize the clinical materials of this hospital.

I thank **Dr. S. Krishnan, Dr.A.S. Krishna Ram, Dr. G. Geetharani,** the Professors of Dermatology Department for permitting me to carry out the study in the Dermatology outpatient clinic. I thank all Assistant Professors of Department of Dermatology for their help in conducting this study.

I am very thankful to **Dr. S. Anandakrishna Kumar, Dr. V. Geethaanjali, Dr. S. John Xavier Sugadev, Dr. M. Karthikeyan**, Assistant Professors in Psychiatry, **Mr. N. Suresh Kumar**, Assistant Professor of Clinical Psychology, Department of Psychiatry for their continuous assistance and encouragement.

I am thankful to fellow Post-graduate students of Department of Psychiatry for their kind advice and help in conducting the study.

I extend my thanks to **Mr. Kannan**, for his expert help in analyzing the data statistically.

Most importantly, I gratefully acknowledge the patients and their relatives who have co-operated to submit themselves for this study.

I also extend my thanks to M/s. Rajeswari Graphics, for processing this dissertation work.

CONTENTS

INTRODUCTION

Psycho-dermatology is a collaborate field of activity that is based on the relationship and interaction between Psychiatry and Dermatology, and in practice this collaboration may have different applications.

- Disease that are based on a psychiatric disorder (artifact dermatitis).
- Psychiatric disorder that appear as a dermatologic disease (delusional parasitosis, body dysmorphic disorder).
- Dermatological diseases formed or advanced by psychosomatic factors (Psoriasis, Neurodermatitis, Hyperhidrosis etc.)
- Psychiatric disorders secondary to social isolation or stigmatization (Depression comorbid with Vitiligo and Psoriasis).
- Dermatological and Psychiatric disorders related to genetic or environmental influences (for example, Mania and Psoriasis).
- Dermatological diseases that appear in chronic psychiatric patients (skin infection due to negligence of hygiene in Schizophrenics).

- Psychiatric disorders that appear in response to medicines for dermatological disease such as steroids.
- Dermatological disease that appear in response to medicines that are used for psychiatric treatment (Chlorpromzaine, Lithium etc.) (Bhatia et al. 1996).

Various studies had been conducted and are ongoing in order to establish the cause and effect relationship and to find the etiologies of all the above mentioned psycho-dermatological issues.

Psychopathological disorders are highly prevalent among dermatology patients (Picardi et al. 2001, Humphreys et al. 1998). The prevalence of psychiatric disorders in the patients presenting to dermatology clinic has been reported as 25-43% (Picardi et al. 2000; Woodruff et al. 1997). Stress may aggravate the cutaneous disease in 40-100% of Patients (Koo et al. 2001). When personality type and disease are matched, it was reported that skin diseases appear in persons who cannot express their anger and hostility sufficiently (Jublin, 1981).

In general, patients prefer the treatment of their dermatological diseases rather than psychiatric disorders and seek dermatological consultation. Consequently, dermatologists often see patients who also have psychiatric disorders (Woodruff, 1997). The most efficient

treatment of dermatological diseases is achieved with combined evaluation of emotional factors (Gupta et al. 1996).

Scope of this Study :

This study focused on psychiatric morbidity in patients with Neurodermatitis, a disease with chronic superficial pruritic inflammation of skin and Tinea versicolar, a common superficial fungal infection of the skin which has a relapsing nature. This study aims to correlate personality profile, hostility, stressors between the two disorders and to understand the relationship between duration of illness, site of lesion with prevalence of psychiatric disorders.

Plan of the Study

The present study has been planned as follows :

Review of Literature

Methodology

Results and Interpretation

Discussion

Conclusion

REVIEW OF LITERATURE

As an easily noticed and touched organ, the skin has a special place in psychiatry. With its responsiveness to emotional stimuli and ability to express emotions and by providing self image and self esteem, the skin plays an important role in the socialization process (Domonkos, 1971; Koblenzer, 1983).

Ingram states that the skin is an extension of the mind and therefore, is an essential part of character and personality assessment (Ingram 1933). The relationship between skin and the brain begins in the embryonic period; skin and the brain stem from the ectoderm and are affected by the same hormones and neurotransmitters (Koblenzer, 1983).

I. Psychodermatological Studies

Psychodermatological studies can be grouped, primarily, according to three categories :

1) The role of stress in the appearance and exacerbations of dermatological diseases.

2) Dynamic and analytical studies related to dermatology and dermatological diseases.

3) Clinical and drug studies related to psychosomatic dermatological diseases.

1. Stress Research

Stress and other psychological factors trigger the formation and exacerbations of many dermatological diseases (Van Moffaert, 1992; Koo and Pham, 1992). Every person has a shock organ that is sensitive to stress, which is defined by environmental and genetic factors, and this shock organ is the skin in people who display dermatological symptoms under stress. There is much research on the role of stress in dermatological diseases, and they are categorized as

a) Environmental factors that cause stress

b) Subjective experience towards specific situations

c) Biological response to stress (Cohen, 1995).

Research has shown that the subjective experience of stress is more important than the actual stress and the conditions that cause stress. Alexander et al. (1968) reported that psychosomatic symptoms appear in the organs that innervate with the autonomic nervous

system, that are formed as the result of lengthened physiological changes induced by unconscious repressed conflicts and that specific unconscious conflicts results in specific psychosomatic illnesses.

Experimental studies showed that the endocrine, immune and nervous system do not work autonomously and that there is a complex interaction between them (Ader, 1995). According to the three stepped stress model developed by Selye, Psychosomatic dermatological diseases appear particularly during the adjustment process (Selye, 1949). It is known that stress is not only a factor that cause illness, but also in the exacerbation of symptoms of many chronic dermatological diseases, such as atopic eczema, neurodermatitis, psoriasis and acne vulgaris (Katsorou-Katsari, 1999; Weigl, 2000)

2. Dynamic and analytical interpretations in dermatological diseases.

Analysts such as Fenichel, Winnicott and Anzieu pointed out the interaction between the skin and the unconscious. Repressed sexuality can be considered in special diseases of the skin such as chronic scratching (Drueck, 1943; Saul 1938). Winnicott suggested that one of the causes of urticaria could be powerful desire that could not find another form of satisfaction (Winnicott, 1934). Eczema

appearing in the first year of life is a result of a faulty mother and infant relationship (Pines, 1980).

3. Psychosomatic dermatological diseases

Koblenzer is one of the most active writers on these diseases, who is both a dermatologist and a psychoanalyst, divides these illness into three groups; purely dermatological, purely psychiatric or a combination of both to clinical practice. In this most frequently used classification system, diseases are divided into three groups (Koblenzer, 1987).

[a] Primary Psychiatric Disorder

In this group, the underlying cause of the symptoms is psychiatric and patient harm their skin due to unconscious defences. When these patients present to a dermatologist, they deny their psychopathologies and want to be treated by the dermatologist. Directly destroying the defences and referring them to psychiatry is harmful because of possibilities of suicidal intentions or worsening of symptoms. The diseases include in this category are artifact dermatitis, delusional parasitosis, neurotic skin picking and trichotillomania.

[b] Secondary Psychiatric disorders.

Fundamentally, dermatological diseases are in this group, but these disorders are strongly influenced by psychosomatic factors. Although the etiology of the disease is physiological, psychological factors and stress exacerbate the dermatological symptom and psychosocial effects of the diseases increase stress. The most important variable that results in psychological susceptibility in dermatological diseases is deformation. Other important variables are the age of the patient, and location and nature of the lesions (Holter, 1961). Despite the size of the lesions, psychological reaction can be very different and this is related to the extent of the underlying psychopathology (Medansky, 1981)

[c] Collaborative Group

Patients in this group are the most difficult to treat. The etiology of the disease is multifactorial. On the one hand stressful situations and on the other hand, complex physiological and psychological defence mechanisms attract attention. The relationship between dermatosis and psychological conditions is least understood in this group.

Psycho neuro immunological factors have a role in the majority of the diseases like lichen planus, neurodermatitis, psoriasis, chronic idiopathic urticaria and alopecia areata (Gupta, 1990). Neuropeptides such as substance P and Vasoactive intestinal peptide have a role in the pathophysiology of diseases like psoriasis and atopic dermatitis (Anand, 1991). Neuro regulation – forming effects of these neuroleptics are affected by psychopathologies such as major depression and psychological stress.

Several psychological disorders such as depression, anxiety, OCD and alcohol dependence are frequent in psoriasis patients (Vidoni, 1989; Rubino, 1989; Higgins, 1994; Devrimci Ozguven, 2000). Depression is frequent in patients with urticaria and angioedema (Gupta 1994). Unal reported that anxiety and depression are three times more common in chronic urticaria patients than the general population (Unal et al.1991).

II. Descriptions of the diseases under study

[a] Neurodermatitis [Lichen Simplex Chronicus-LSC]

Neurodermatitis circumscripta (also known as Lichen Simplex Chronicus), a localized form of lichenification, is a chronic, superficial, pruritic inflammation of the skin occurring in a well circumscribed

plaques. It is caused by habitual repetitive scratching or rubbing of the skin in regions accessible to scratching. Pruritis, which is more pronounced during periods of inactivity, seems to provoke rubbing resulting in the clinical lesions. It typically presents as single or multiple, slightly erythematous, scaly, well demarcated, hyperpigmented, lichenified, rough plagues, on any location that the patient can reach.

Epidemiology : Neurodermatitis occurs mostly in mid-to-late adulthood, with highest prevalence in persons aged 30-50 years. It is observed more commonly in females than in males (Lyon, 1993). No differences are reported in frequency among races, but more commonly reported in Asians and African Americans. Exact frequency in the general population is unknown, but few international studies indicates 12% of aging patients with pruritic skin had Lichen Simplex Chronicus. Patients with coexistent atopic dermatitis have been found to have an earlier age of onset (mean : 19 years) as compared to nonatopic group (mean : 48 years) .

Pathophysiology : A relationship likely exists between central and peripheral nervous and inflammatory cell products in the perception of itch and ensuing changes in Lichen simplex chronicus. The possible interplay among primary lesions, psychic factors, and the

intensity of pruritis additively influence the extent and severity of Lichen Simplex Chronicus. Environmental factors have been implicated in inducing itch, such as heat, sweat and irritation associated with ano-genital Lichen Simplex Chronicus. It has been postulated that neurotransmitters that affect mood, such as dopamine, serotonin, or opioid petides, modulate perception of itch via descending spinal pathway.

Clinical Findings : Severe itching is the hallmark of Lichen Simplex Chronicus. Itching may be paroxysmal, continous or sporadic. Rubbing and scratching may be conscious, and to the point of replacing the sensation of itch with pain, or may be unconscious, occurring during sleep. Itch severity is worse with sweating, heat or irritation from clothing. Itching is also worse in times of psychological distress. In its most common presentation, a typical LSC plaque have three zones, with central zone has the greatest thickening and pigmentary alteration. LSC may become secondarily infected after excoriation.

The most common sites of involvement are the scalp, the nape of the neck (especially in women), the ankles, the extensor aspects of the extremities, and the anogenital region. The labia majora in women and the scrotum in men are the most common sites of genital

involvement. The upper inner thighs may also be affected (Ball et al. 1998). Usually, only one plaque is present; however, more than one site may be involved. Erythema is noted most in early lesions. Hypo and Hyper pigmentation are seen with chronicity.

Differential Diagnosis : Neurodermatitis may need to be differentiated from lichen amyloidosis, atopic dermatitis, allergic and irritant contact dermatitis, cutaneous T.cell lymphoma, lichen planus, discoid eczema, plaque psoriasis, seborrhic dermatitis and statis dermatitis (Weyer, 1995). Potassium hydroxide examination and fungal cultures are usually required to exclude tinea cruris or candidiasis particularly in patients with genital LSC.

Treatment : Apart from treatment with Topical steroids, oral antihistaminics and intralesional steroids, Tricylic antidepressants, serotonin specific reuptake inhibitors and anxiolytics have been found to have a major role in the management suggesting psychological factors and psychiatric morbidity associted with LSC (Thompson etal 2001). Treatment centers around breaking itch-scratch cycle, which often occurs during sleep (Lynch, 2004).

[b] Tinea Versicolor

Tinea Versicolor (TV) is a common superficial fungal infection of the skin characterized by scaly, hypo or hyperpigmented lesions most commonly affecting the trunk and upper aspects of the arms.

Etiology : Tinea versicolor is caused by a nondermatophyte dimorphic fungus, which is a normal inhabitant in the skin. As the yeast form Pitryosporum orbiculare, it generally does not cause disease (except for folliculitis in certain invidiuals). However in some individuals it converts to the hyphae form Malassezia furfur and causes characteristic lesion (Melen et al. 2004).

Clinical features : Tinea versicolor is most often diagnosed based on clinical appearance. The typical lesions consists of oval scaly macules, papules, and patches concentrated on the chest, shoulders, and back, but only rarely on the face or distal extremities. On dark skin they appear hypopigmented and on light skin appear hyperpigmented. The disease has a relapsing nature, and may require repeated treatment (Gupta et al. 2004)

Treatment : A KOH preparation from the scaling lesions will demonstrate a confluence of short hyphae and round spores (so called spaghetti and meatballs). Solutions containing sulfur, salicylic acid

or selenium sulfide will clear the infection if used daily for a week and then intermittently thereafter.

III. Psychiatric Morbidity in Dermatological Disorders

(i) Prevalence Rate

Woodruff et al. (1997) have reported a prevalence of 30-40% for psychiatric problem among the dermatology patients attending their clinic. On the other hand, Picardi et al.(2000) have reported 25.2% psychiatry morbidity rate in dermatology patients. In general evaluation of the epidemiological studies, the prevalence of psychiatric morbidity was found to be 25-43% in outpatient dermatology patients (Picardi et al. 2001).

Muammer Seyhan et al.(2006) had observed over period of 3 years, 16.4% had received psychiatric consultation from dermatology clinic, and among them 93.3% had received a diagnosis of a psychiatric disorder. Aktan et al. (1998) have found 33.4% prevalence of psychiatric disorders accompanying dermatological diseases.

ii) Psychiatric Disorders

Depression (34%) was the most prevalent finding in the study of Pulimood (Pulimood et al. 1996). Chronic urticaria, exfoliative dermatitis and sexually transmitted diseases was the diseases that led to psychiatric disorders most. In study by Aslan et

al. (2003) depression was the most prevalent and adjustment disorder was the second most prevalent psychiatric disorders. Woodruff et al. (1997) have reported mild to moderate depression (28%), mild anxiety (25%) and severe depression (14%). In the study of Akay et al. (2002) from Turkey, depression rate was 58% in the patients with psoriasis, 53% in the patient with Lichen planus, while it was 20% in the control group. In a recent study by Erinfolami et al. a case control study, psychiatric morbidity was 58% in patients with Leprosy, 18.2% in Tinea Versicolor compared to 14.8% in normal controls. Depressive illness was the most common diagnosis in all the three groups (Erinfolami et al. 2009).

iii) Age

Woodruff found mean age of female patients with psychiatric disorder was 46.8 years, and of male patients 41.9 years (Woodruff et al. 1997). Seyhan had found, mean age of female were 37.8 years and 35.0 for male suggesting younger age in male patients presenting with psychiatric disorder compared to females (Seyhan et al. 2006).

iv) Sex

The prevalence of psychiatric morbidity is higher in female patients and widows, particularly those with eczema, psoriasis,

pruritis, urticaria, acne and alopecia with widespread lesions (Humphreys et al. 1998). Picardi et al. have found higher Psychiatric morbidity rates in females, widows and widowers. The same study found there were no differences associated with age and educational level of patients (Picardi et al. 2000).

v) Marital Status

Study by Seyhan et al.(2006) found that psychiatric morbidity was prevalent in married patients and significantly higher in female patients .

vi) Site of Lesion

Psychiatric morbidity rate has been found to be high in females with hand and foot lesions (Picardi et al. 2001). It has been found that out of 67.7% presenting with depression in females, 40% had lesions at visible parts of their bodies (Seyhan et al. 2006). When dysmorphic diseases such as acne and psoriasis lead to lesions, particularly of face, the prevalence of depression and suicide attempts have been relatively higher in both genders (Cotteril et al. 1997).

vii) Duration of Illness

Psychiatric morbidity rate in the patients with dermatological problems of longer than one year was 27.8% while it was 72.2% in

those with problems of less than one year. The lower rate could be attributed to psychological adjustment to the longstanding disease (Seyhan et al. 2006). As the duration of disease in pityriasis rosea advance, there has been a positive correlation for development of depression (Yesim Kaymak et al. 2008).

viii) Family History

Woodruff et al. (1997) have found among patients with psychiatric morbidity in dermatological diseases, patients had past history of psychiatric illness in 40%, family history of psychiatric illness in 29% and history of additional systemic disease in 29%.

ix) Suicide

Chronic and debilitating dermatological diseases like psoriasis may lead to suicide associated with depression (Barankin et al 2002). Particularly female patients with dermatological problems on the face and male patients with dermatological scars have been reported to have higher suicidal tendency. Therefore young patients with scarring Acne and patients with Atopic dermatitis should undergo comprehensive psychiatric evaluation (Cotteril et al. 1997).

Prevalence studies thus suggest that the prevalence of psychiatric morbidity in dermatological diseases has been found to be

25-43%. Depressive disorder, anxiety disorder and adjustment disorder are the more common psychiatric disorder. Less common general psychiatric disorders include social phobia, somatisation disorder, alcohol dependence syndrome, obsessive compulsive disorder, post-traumatic stress disorder, anorexia nervosa and Schizophrenia (Woodruff et al. 1997).

IV Psychiatric Aspects of Neurodermatitis and Tinea

[A] Neurodermatitis

Besnier, who first described this skin disorder believed that the skin lesion would heal if the patient was somehow prevented from scratching (Rechardt, 1970). The term Neurodermatitis was coined by Brock and Jacket in 1891 for certain forms of chronic eczema resulting from "nervous causes" (Engels and Wittkower, 1967). In 1946, Levin and Behrmann stressed that in Neurodermatitis the "neuro" does not refer to "nervous" but to "the vasomotor instability" which is so easily affected by labile emotions.

(i) Personality Profile :

The severe form of neurodermatitis accompanied by intense pruritis are met within subject who have an essentially nervous temperament (Brunsting 1936). Numerous studies which have been

reported about the personality of Lichen Simplex Chronicus from Walsh 1951 to Rechardt 1970 were psychoanalytically oriented (Srivastava et al. 1977). Many workers in the field have reported association between obessionality and neurodermatitis (Mackenna 1944, Fiske and Obermayer 1954 and Rechardt, 1970).

The neurodermatitis patients scored higher in free floating anxiety and obessionality. The neurodermatitis group tended to be more obsessive than the neurotic group (Srivatsava, 1977). Obermayer pointed out that it appeared as if almost all investigators agreed that patients with Neurodermatitis are characterized by lack of self confidence, feelings of inferiority and inadequacy, sensitiveness, above average intelligence, emotional instability, restlessness, irritability and dominance (Obermayer et al. 1952). Neurodermatitis patients have highest elevation on hypochondriasis and hysteroid character traits (Gilberstadt, 1961).

Neurodermatitis patients are prone to be self centred and concerned with the impression they make upon others. They are concerned with their appearance, would be self conscious over it and fear being ugly. They tend to be dependent personalities with marked feelings of insecurity so that in consequence they swallow their trouble and harbor their resentment. In this dependence, ambivalent attitude

can be observed toward the mother figure, a true conversion reaction appears to take place with the skin as the point of fixation. This mechanism serves two purpose, a neurotic adjustment and a prolonged skin diseases. As such it brings satisfaction, attention and secondary gain (Doyle, 1953).

ii) Stressors :

There has been overwhelming importance of environmental stress connected with the onset of the lesion. Neurodermatitis patients tended to show the common denominators of suppressed resentment, tension, high intelligence and self assertiveness (Doyle, 1953). At times it has been stressed that the skin can be eroticized for the expression of hostile or masochistic tendencies. From the psychosomatic aspect, the skin has been looked upon as "an organ of expression" (Scarborough, 1948).

Commonly, neurodermatitis patients presented with longstanding psychological problems in the context of ongoing social difficulties rather than following discrete precipitants (Woodruff et al. 1997). Neurodermatitis patients showed significant higher occupational and psychosexual problems compared to Tinea, in a study by Bhatia (Bhatia et al. 1996). Ayyar et al. (1986) has found that

patients with neurodermatitis reported more occupational problems, marital disharmony and sexual problems compared to scabies.

The unsatisfactory early childhood experiences of neurodermatitis patients have been stressed by Miller and Marmor (Miller, 1948; Marmor 1958). Parental loss has been found to be high in neurodermatitis compared to scabies, but statistically insignificant (Ayyar et al. 1986). Further it has been found that neurodermatitis patients have authoritarian father and unconsciously they felt great resentment towards mother because they feel that they had never received adequate love and attention from them (Gilberstadt, 1961). Females are more affected by life events resulting in excessive psychiatric morbidity (Gupta et al. 1981).

iii) Site of Lesion

The localization of the lichenfied lesions is thought by many investigators to have a definite symbolism. Cormia states that localization to the nape of neck indicates family troubles; the face and back, the front of neck indicate shame; knees, ankles and shoulders proclaim excessive mental, marital and family responsibility. Localisation to the thighs and anogenital region has been related to sexual disorders (Cormia, 1950).

iv) Hostility

Anger may be expressed by a flushing, fear by pallor, self punishment through the perpetuation of an existing skin lesion by scratching. All of these reactions are readily expressed and fulfilled in the skin – an organ vitally connected with emotional meaning. There was a definite correlation between events which evoked anger and depression and exacerbations of the eruptions. Hostility rarely ended in overt action; rather it was suppressed and in times of stress the dermatitis underwent an exacerbation (Doyle, 1953). Overt hostility in the form of aggressive behavior was less in neurodermatitis patients (Ayyar et al. 1986). But previous studies had found overt hostility more in neurodermatitis (Engel et al. 1975).

McLaughlin claimed in neurodermatitis, excessive passivity and clinging dependency, coupled with a crippling inhibition of aggressive and erotic drives (McLaughlin et al. 1953). Seitz et al. (1952)demonstrated neurodermatitis patients have strict and punitive super egos and tend to express aggressiveness masochistically. Unexpressed rage and guilt, as well as the unsatisfied wishes for love, may find symptomatic expression in the form of scratching (Seitz et al. 1952).

According to Freid, patients with neurodermatitis are usually described as stable but anxious individuals, whose reactions to stress are relieved by ritualized behavior such as rubbing (Freid, 1994). Aggression and hostility related to anxiety caused by emotional disturbance may lead to itching. This maladaptive response has been treated successfully with behavior therapy to break the itch-scratch cycle (Freid, 2002).

*v) **Psychiatric morbidity***

Anxiety or depression exacerbates neurodermatitis by elicting scratching behavior, and depressive symptoms appear to amplify the itch perception. Although neurodermatitis do not threaten life, they have a negative impact on the quality of life, and in majority of patients, psychological disturbances and social isolation occur. Many patients may end up in depressive disorder, anxiety disorder and social phobia (Higgins, 1994).

Depression, hypochondriacal symptoms and chronic anxiety are significantly more frequent in patients with neurodermatitis (Ginsburg, 1993). While the severity of scratching is comparable with severity of depression, the severity of psychopathology was not comparable with severity of neurodermatitis (Gupta, 1994). Stress

related to the disease or due to familial reasons plays an important role in increasing the severity of the disease (King, 1991).

Anxiety neurosis and neurotic depression are common psychiatric disorders in patients with neurodermatitis (Koblenzer et al.1993). Bipolar disorder was the most common primary psychiatric condition noted in neurodermatitis by Kuruvilla (Kuruvilla et al. 2004).

Women tend to have higher depression (56.9%) than men (44.8%) but men had more anxiety disorder (22.4%) compared to women with Anxiety disorder (16.9%) in a study of comorbidity of psychiatric disorders in dermatological patients by Attah Johnson (Attah Johnson et al. 1995).

The neurodermatitis patients scored significantly higher anxiety symptoms and depression symptoms compared to scabies patient in a study done by Ayyar (K.S.Ayyar et al. 1986). Restlessness, irritability and impatience has been found to be high in the scores (Allerhand, 1950). These patients have significant high level of depression and neuroticism (Bhatia et al. 1996).

[B] Tinea Versicolor

Tinea have tendency to start at spring and possible impact on the individual's body image. Although the lesions easily respond to treatment, discoloured patches exist under the healing lesions and lesions tend to recur every summer. Therefore these patients might experience discomfort regarding physical appearance related to the disease which might have an impact on their physical status, even resulting in psychiatric disorders. Anxiety Disorder and Depressive disorder are the common psychiatric disorders in patients with Tinea versicolor. In a study by Yesim Kaymak et al. (2008). 34.9% of patients with Tinea versicolor had anxiety and 30.2% of patients had depression. Anxiety, depression and quality of life in patients with Tinea were unrelated with duration of disease. Length of the disease determines the severity of both psychopathology and derailment in quality of life.

Similar rate of 30-35% of patients with Tinea had anxiety disorders and 30-35% had depressive disorder in various studies (Baz et al.2004, Picardi et al. 2000). Few studies indicate anxiety is mostly an acute psychological response to stress and depression is a delayed psychological response to stress (Taner et al. 2007).

Tinea versicolor was found to be one of the most common dermatological disease (23%) in patients with primary psychiatric disease probably due to poor personal hygiene, negligence and non compliance of the patient with the treatment (Kuruvilla et al. 2004).

V. Indian Studies

Mattoo et al.(2005) had studied psychiatric morbidity in Psoriasis, found 22.33% rate of ICD 10 diagnosable psychiatric disorder which was far lower rate than other studies including study done by Pulimood et al.(1996) who have found depression itself was found in 34% of patients with dermatological disease. Life stress in dermatology outpatients was done by Bagodia et al. 1998. Substance dependence disorders were found to be absent in dermatological outpatients in their study done by Bharat and Deshpande, but psychiatric morbidity have been higher in the range of 40-50% with depression and 33-50% had anxiety disorder (Bharat et al. 1997; Deshpande et al. 1998).

In the study of psychological factors in psoriasis, Chaudhury had found 18-20% rate of alcohol dependence in patients with psoriasis and higher psychopathology correlated with stressors. (Chaudhury et al. 1998). In the study of age and gender differences in the impact of psoriasis upon the quality of life by Gupta and Gupta

had found younger age and female gender had higher psychopathology (Gupta and Gupta, 1995). The same authors had found correlation of stressors with depression and suicidal ideation in patients with acne, alopecia areata, atopic dermatitis and psoriasis (Gupta and Gupta, 1998).

In the study of psychiatric profile of patients with neurodermatitis, Bhatia et al. (1996) had found significant stressors in neurodermatitis patients in occupational and psychosexual dimensions compared to Tinea patients. Further neurodermatitis patients had higher rate of depression compared to Tinea patients.

Psychiatirc morbidity in Vitiligo studied by Mattoo et al. (2002) who found prevalence rate of 25% and adjustment disorder was the common diagnosis. Psychatric morbidity was significantly correlated with dysfunction arising out of illness. A study of skin disorders in patients with primary psychiatric condition done by Kuruvilla et al. found dermatophyte infections formed the majority of cutaneous disorders namely Tinea corporis followed by Tinea cruris. Lichen Simplex Chronicus which is usually aggravated or perpetuated by self induced trauma was seen in 3.33% of the patients with primary psychiatric disorder. Bipolar mood disorder was found to be the most

common primary psychiatric condition in these patients (Kuruvilla et al. 2004).

Personality profile in Neurodermatitis was studied by Srivatsava et al. had found neurodermatitis patients had higher obessionality than neurotic persons, higher neuroticism score than normal persons, scores low in extraversion, neuroticism score unaffected by the duration of illness, high neuroticism associated with scrotal involvement and free floating anxiety higher in neurodermatitis patients (Srivastava et al. 1977). In a study of psychological factors in neurodermatitis, Ayyar et al. (1986) had found that the patients with Neurodermatitis had higher childhood traumatic experience; obsessive, hysterical, psychopathic and aggressive personality traits had been significantly higher than scabies patients; anxiety and depressive symptoms score had been higher and more life stressor particularly in areas of occupational, marital and sexual dimensions.

VI. Recent Concepts

The most widely accepted classification system of psycho-cutaneous disorder currently accepted was devised by John Koo and Chai Sue Lee which is also included in the text revised fourth edition

of Diagnostic and Statistical Manual of Mental Disorders (DSM IV TR) classification of psychocutaneous disorders (Koo and Lee 2003).

Classification of Psychocutaneous Disorder

Koo's Classification		DSM IV TR Classification
Psychophysiological Disorders	1.	Psychological factors affecting medical conditions (Atopic dermatitis, psoriasis, alopecia areata, urticaria and angioedema, acne vulgaris, Lichen Simplex Chronicus)
Primary Psychiatric Disorders	2. 3. 4.	Delusional Disorder, Somatic type (Delusional parasitosis etc.) Impulse control disorders not elsewhere classified (OCD Spectrum Disorder) (Psychogenic Excoriation, Trichotillomania) Factitious disorder (factitious dermatitis, psychogenic purpura)
Secondary Psychiatric Disorders	5. 6. 7.	Adjustment disorder with Anxiety and depression. Generalised anxiety disorder. Major Depressive Disorder
Cutaneous Sensory Disorder	8. 9.	Undifferentiated somatoform disorder, chronic idiopathic purpura, body dysmorphic disorder. Pain Disorder. (Idiopathic Glossodynia, Vulvodynia)
Psychotrophic Medication for Nonpsychiatric Indication		

Psychoneuroimmunology

Psychoneuro immunology has gained increasing attention since R. Adler and N. Cohan demonstrated behaviourally conditioned

immunosuppression. Picardi and Abeni (2001) found evidence for the role of stress in exacerbations of Psoriasis, atopic dermatitis, urticaria and alopecia areata.

A perceived stressful stimuli trigger the neuroendocrine pathway pick the hypothalamic – pituitary - adrenal (HPA) axis which secretes Cortisol through CRH, AVP and ACTH. Recent Research indicates that chronic stress produce immunosuppressive effect, blunted HPA axis response, produce lower cortisol levels in responses to stress and Glucocorticoid resistance. Psychological stress can increase catecholamine levels through an over reactive sympathetic response. Individuals with Lichen simplex chronicus are more vulnerable to experience itching in response to minor stimuli and emotion upsets, resulting from CNS arousal, which can enhance the vasomotor and stress response in skin and lead to lowered itch threshold, which triggers scratch response. These will raise levels of cutaneous histamine.

VII. Future Direction

In the literature on psychocutaneous disorders most reports are in the form of scattered clinical observations, interpreted psychoanalytically. Diversity of methodology, poor collaboration between Dermatologist and Psychiatrist and lack of standardized

measuring tools were the stumbling blocks in the progress of fruitful research.

The recognition of psychiatric disorders by a dermatologist is not adequate in itself. In a study of recognition of depressive and anxiety disorders in dermatological outpatients by dermatologists, Picardi et al. (2004) had found anxiety disorders tended to be recognized better than depression and male gender tended to be associated with misclassification by Dermatologists. Meta-analysis of various studies indicate patients with dermatological diseases are at risk for psychopathology. Therefore, these patients should be questioned about their psychological status and those with possible psychiatric morbidity should have a psychiatric evaluation to evaluate and address possible psychopathology that might affect quality of life in these patients. The presence of a Psychiatrist in the dermatology unit makes the acceptance of the psychiatric treatment by patients easier (Gould, 2004).

The drugs used in the treatment of dermatological diseases such as steroid and retinoid may lead to psychiatric symptoms (Koo et al. 2001). In the study of Seyhan et al. 31% of patients had used steroids, which may have facilitated the development of psychopathologies (Seyhan et al. 2006). Thus, the patients with psychopathologies

requiring steroid therapy should be closely observed. Accordingly, the patients with dermatological diseases and their family should be educated and there must be a well established patient – doctor relationship. Individual or group therapies should be performed and internet sites and associations should be set up for patients (Koo et al. 2001).

Of the dermatological categories, 1) exacerbation of pre-existing chronic skin disease; 2) symptoms out of proportion to the skin lesion 3) dermatological nondisease 4) scratching without physical signs; psychopathologies were commonest in dermatological non-disease and exacerbations of pre-existing chronic skin disease.

The co-operation of the Dermatologist and a Psychiatrist in order to increase the life quality of the patients suffering from dermatological disease is of utmost importance. Psychiatrist liaison with Dermatologist, improving the knowledge on the psychiatric morbidity in dermatological diseases may help in early diagnosis of psychiatric condition and prompt referral. Collaborative research by Psychiatrist and Dermatologist on psychocutaneous disorders will give more insight into personality profile, role of stressors and psychopathologies in these patient so that their quality of life may be significantly improved.

VIII. Relevance of this study

As the findings made out during the survey of the literature, neurodermatitis patients reports having been emotionally deprived in childhood; reports parental psychopathology; is likely to have anxious or obsessive disposition, high neuroticism, have high degree of inhibited anger, aggressive hostility and suppressed hostility; is likely to have several symptoms of anxiety and depression and higher rate of psychiatric morbidity. On the other hand Tinea versicolor which is recurring disorder and have an impact on body image, presents with anxiety and depressive disorders as common psychiatric disorders which affects quality of life of these patients.

From the background of these studies, it emerges that a study of psychiatric morbidity in patients with Neurodermatitis and Tinea versicolor and to correlate them with stressors, hostility, personality profile and physical variables will help in better understanding these disorders; early identification and prompt treatment of psychiatric morbidity by pharmacological and psychotherapeutic interventions which will reduce morbidity and improve quality of life.

METHODOLOGY

AIM OF THE STUDY

To assess the prevalence of the Psychiatric morbidity in patients with Neurodermatitis, to correlate them with stressors, personality profile and physical variables, to compare them with patients with Tinea versicolor and to know their clinical relevance.

OBJECTIVES :

1) To identify the prevalence of Psychiatric Morbidity among patients with Neurodermatitis and Tinea Versicolor.

2) To know the relationship of Psychiatric morbidity and psychosocial stressors.

3) To study the pattern of personality traits in patients with Neurodermatitis.

4) To correlate the hostility scoring and psychiatric morbidity among the patients with Neurodermatitis and Tinea versicolor.

5) To correlate the psychosocial factors that contribute to psychiatric morbidity in patients with Neurodermatitis.

6) To correlate illness related variables like duration of illness and number of lesions with Psychiatric morbidity.

To satisfy these aims and objectives, the Research design was planned to be based on hypothesis testing design, with the use of validated structured tools and statistics. The following HYPOTHESES were framed.

1) Psychiaric morbidity is more in patients with Neurodermatitis when compared with patients with Tinea versicolor.

2) Depression is the commonest psychiatric morbidity in patients with Neurodermatitis.

3) Significant stressful life events and life events scoring increases the risk of psychiatric illness.

4) Longer duration of illness, increases the risk of psychiatric illness among patients with Neurodermatitis.

5) Psychiatric illness is more common in women than in men with Neurodermatitis.

6) Family history of psychiatric illness increases the risk of psychiatric morbidity in Neuordermatitis compared with Tinea versicolor.

7) High neuroticism score in personality profile increases risk of development of Neurodermatitis compared to Tinea versicolor.

8) Total hostility and self directed hostility has been high in patients with Neurodermatitis compared to Tinea.

The sample was chosen from patients attending Dermatology outpatient clinic. Forty patients diagnosed as Neurodermatitis by Dermatologist who satisfied the inclusion and exclusion criteria were chosen as Index Group for the study. Forty patients diagnosed as Tinea Versicolor were selected, who satisfied the inclusion and exclusion and by matching for age and sex with the index group, as control group.

INCLUSION CRITERIA

1) Patients should fulfill the criteria for Neurodermatitis (ICD_{10} L28.0) and Tinea Vesicolor (ICD_{10}B36.0), according to International classification of Disease – 10^{th} Revision (ICD_{10} – WHO 1992), included as cases and controls respectively.

2) Patients should be between age group of 18-65 years.

3) Patients should be willing and cooperative and who gave consent were included for the study.

EXCLUSION CRITERIA

1) Patients who have comorbid medical illness in the present or any medical illness in the past.

2) Patients who have other dermatological diseases including atopic dermatitis.

3) Patients who have suffered from any past psychiatric illness or substance dependence or mental retardation or dementia.

4) Patients who have received any psychiatric treatment currently.

OPERATIONAL DESIGN

The study was conducted in Government Rajaji Hospital, Madurai from the period of January 2008 to September 2008. Patients who attended Dermatology Outpatient Clinic were chosen. Patients diagnosed as Neurodermatitis and Tinea versicolor by dermatologist based on International Classification of Disease 10^{th} Revision (ICD_{10} WHO 1992) were chosen as Index group and Control Group respectively. All the patients were initially screened by Post-

graduate for inclusion in the study, discussed with senior Psychiatrist and on his advice were included in the sudy. First forty patients with Neurodermatitis seen consecutively were chosen as index group and forty patients with Tinea Versicolor were chosen as control group.

Each patient and his attenders were explained about the nature of the study and were motivated to participate in the detailed testing, after getting informed consent. Patients were interviewed before any psychiatric medication. Details of socio-demographic profile were collected followed by thorough evaluation of physical status including detailed neurological examination. Mental status examination was done. Blood, urine and biochemical screening tests were done to rule out organicity. Patients were assessed in two sessions on two consecutive days. All the patients co-operated very well.

The following tools were used to evaluate the patients.

1. Proforma
2. Mini-International Nueropsychiatric Interview (Sheehan and Lecrubier, 1992).
3. Socio-economic status scale (Gupta and Sethi, 1978; Kuppusamy, 1962).
4. Presumptive Stressful life events scale (Gurmeet Singh, 1984).

5. Hostility and Direction of Hostility Questionnaire (T.M. Caine et al. 1967).

6. Eysenck's Personality Inventory (Eysenck & Eysenck, 1964).

7. Hospital Anxiety and Depression Scale (Zigmond and Snaith, 1983).

STATISTICAL DESIGN

Statistical Design was formulated using the data collected as above. For each of the scales and socio-demographic variables, the central values [arithmetic Mean] and Dispersion tendencies [Standard Deviation] were calculated. In comparison of the data, for categorical variables, Chi square and for numerical variables Student 't' test were used. For knowing the significance of psychopathological attributes correlation matrix were used.

1. Proforma : Proforma includes personal demographic details, personal history, past history, family history, duration of illness, site and number of lesions, clinical examination and laboratory findings.

2. MINI International Neuropsychiatric Interview (Sheehan and Lecrubier, 1992).

The M.I.N.I is the most widely used psychiatric structured diagnostic interview instrument in the world. The MINI has been

translated into 43 languages and is used by mental health professionals and health organizations in more than 100 countries. The M.I.N.I. is a short, structured diagnostic interview that was developed by psychiatrists and clinicians in the United States and Europe for DSM IV and ICD-10 psychiatric disorders. It includes modules for 23 disorders and features questions on rule-outs, disorder subtyping and chronology. It also features a number of algorithms to handle hierarchical rule-outs in the event that the patient had more than one disorder at a time. With an administration time of approximately 15 minutes, the M.I.N.I. is structured psychiatric interview of choice for psychiatric evaluation and outcome tracking in clinical psychopharmacological trials and epidemiological studies. The M.I.N.I has been validated against the much longer structured clinical interview for DSM diagnosis (SCID-P) in English and French and against the composite International Diagnostic Interview for ICD_{10} (CIDI) in English, French and Arabic. It has also been validated against expert opinion in a large sample in four European countries (France, United Kingdom, Italy and Spain). In India, Chandrasekaran et al.(2005), in a study on attemped suicide used the MINI scale as also by Venkatasubramanian et al. (2007) in their study on Relationship between Insulin Growth Factor and Schizophrenia.

3. Socioeconomic Status Scale (S.E. Gupta and B.P. Sethi 1978, Kuppusamy, 1962).

SES consists of scores on three variables namely Education, Occupation and Income; on the basis of a ten point scale. It consists 10 categories of SES ranging from the highest to the lowest. The categories are being grouped with five social class namely very high, high, upper middle, lower middle and very low. The 10 point scale consists of 200 scores with equal class interval. The inter rater reliability is found to be very high (R = 0.9). This scale incorporates guidelines to score children, dependent person as well as nondependent person, married and unmarried subjects. The general principle applied that the initial 40 scores deals remarkable lower 8 position. The next 60 scores related to average to slightly above average position and the scores between 100-200 pertains to the higher positions.

4. Presumptive Stressful Life Events Scales (PSLES – Gurmeet Singh et al. 1984).

PSLES is a scale of stressful life events designed for use in Indian population. The scales were revised based on Holmes and Rahe's Social Readjustment Rating Schedule (SRRS) because many items in the SRRS were found to be not applicable to Indian

population. Each event is given a mean stress score which varies from 95 to 20. The event may be further divided into desirable and ambiguous, personal and impersonal. The score may be administered for two time spaces (ie) life time and recent one year. More than two life events and a raw score of 105 is significant.

5. Hostility and Direction of Hostility Questionnaire (T.M. Caine, G.A. Foulds, K. Hope 1967).

The scale was originally constructed by Foulds from Minnesota Multiphasic Personality Inventory, contains 51 items. It contains five subscales, three of which (Acting out hostility, Delusional Hostility and Criticism of others) measure extra -punitiveness and the other two (Delusional Guilt and Self Criticism) measure intrapunitiveness. When the sum total score in all the five factors are taken, it gives the general punitive factor. It is a reliable scale.

The H.D.H.Q. questionnaire were given to the subjects and they were asked to mark True or False in the bracket. One score is credited for each statement filled as true, except for a few where false is scored as one. The detailed scoring key is given in the appendix. The split half method of Spearman was used to test the reliability, which was quiet high.

6. Eysenck's Personality Inventory (Eysenck and Eysenck, 1964)

EPI is a personality questionnaire developed by Eysenck and Eysenck (1964) to measure two independent dimensions of personality neuroticism – stable dimensions and extraversion introversion dimension. It consists of 57 statements to which the subject responds by answering yes or no. A lie score is also incorporated to assess the desirability response set. Twenty four questions each assess neuroticism and extraversion dimensions and nine questions assess lie score. The Tamil adaptation of the inventory by Varghese (1969) is employed because the 'N' scores of this version was found to effectively differentiate neurotics from normals. The test retest reliability correlation for the N-Scale of the inventory was high 0.71 (Hossein et al. 1974). The norms obtained by Varghese (1969) has been utilized for the study.

7. Hospital Anxiety and Depression Scale (Zigmond and Snaith, 1983).

The HAD scale is a questionnaire commonly used by Mental Health Professionals to assess the levels of Anxiety and Depression. The HADs comprises of statements which the patients rate based on their experience over the past week. The 14 statements are relevant

to either generalized anxiety (7 statements) or depression (again 7), the latter being largely composed of reflections of the state of anhedonia.

Even numbered questions relate to depression and odd numbered questions relate to anxiety. Each question has four possible responses. Responses are scored on a scale from 3 to 0. The maximum score for depression is therefore 21 and 21 for anxiety. A score of 11 or higher indicates the probable presence of Mood or anxiety disorder. The two subscale, anxiety and depression , have been found to be independent measures. HADS now divided into four ranges : normal (0-7), mild (8-10) moderate (11-15) and Severe (16-21).

Limitations

1. Major Limitation of the study is the fact that, it is a cross sectional analysis involving a small sample size. A large sample size in both index and control groups could have made the results more generalisable.

2. Consecutive follow up of the groups periodically for a longer period could have enabled a more detailed understanding of the illness, course and outcome.

RESULTS AND INTERPRETATIONS

TABLE 1

TABLE SHOWING SOCIO DEMOGRAPHIC VARIABLES OF INDEX PATIENTS AND CONTROL GROUP

S.No.	Variables		Neurodermatitis Index Group (N=40) n	Tinea Versicolor Control Group (N=40) n	Statistical Analysis
1.	Age (in years)	<30	2	7	x^2= 5.79
		31-50	18	22	
		>51	20	11	
2.	Sex	Male	16	13	x^2 = 0.49
		Female	24	27	
3.	Literacy	Nil	2	1	x^2 = 4.14
		Primary	21	19	
		Secondary	16	14	
		> 11 years	1	6	
4.	Socio economic Status	Upper Middle	1	2	x^2 = 1.59
		Middle	13	11	
		Lower Middle	23	21	
		Very Low	3	6	
5.	Marital Status	Married	39	39	x^2 = 0.00
		Unmarried	1	1	
6.	Domicile	Urban	18	24	x^2 = 1.81
		Rural	22	16	

Table 1 shows the Mean age for Neurodermatitis was 49.95 with standard deviation 9.15 and Mean for Tinea Versicolor was 41.80 and S.D. 10.28. The age ranges from 29-60 in index group and 23-60 in

control group. Majority of the patients were above 30 years in both index and control group, but the difference was statistically not significant. Majority of patients were females in both groups accounting 60% in Neurodermatitis and 67.5% in Tinea versicolor but the difference was statistically not significant. Almost all patients were married except one in each group. The distribution of Index and Control group with regard to educational status showed that, in the Neurodermatitis patients 2(5%) were illiterates, 21(52.5%) have studied upto 5th std and 17(42.5%) have studied more than 5 years. In Tinea patients 1(2.5%) was illiterate, 19(47.5%) studied upto 5th std and 20(50%) have studied more than 5 years. This difference was statistically not significant.

Regarding socioeconomic status, in index group 23(57.5%) belong to lower middle class whereas in control 21(52.5%) belong to lower middle class. The difference was statistically not significant. Statistical analysis suggest distribution of domicile in both groups also not significant. Thus none of the sociodemographic variable had significant difference in both groups.

TABLE 2

TABLE SHOWING STRESSFUL LIFE EVENTS AND SCORING, FAMILY HISTORY OF PSYCHIATRY ILLNESS AND PERSONALITY PROFILE OF INDEX AND CONTROL GROUP

S.No.	Variables		Index Group (N=40) n	Control Group (N=40) n	Statistical Analysis
1.	PSLE Scoring	<200	14	20	x^2= 2.76
		201-500	16	15	
		>251	10	5	
2.	PSLE Events	<4	23	30	x^2= 2.74
		>5	17	10	
3.	Family H/O Psychiatic Illness	Absent	29	31	x^2= 0.27
		Present	11	9	
4.	Personality Profile	Intraversion	0	1	x^2= 5.33
		Ambivert	40	35	
		Extraversion	0	4	
		Stable	0	0	x^2= 27.86**
		Tendency to be Neurotic	13	36	
		Neuroticism	27	4	

** P < 0.01

PSLE Scoring Index group Mean(225.15) SD (47.23) Rane (141-387)
Control group Mean (202.5) SD (40.76) Range (138-308)
PSLE Events Index group Mean (4.5) SD (1.11) Range (3-8)
Control group Mean (3.9) SD (0.78) Range (3-5).

On analysis of Presumptive stressfull Life Events Scoring, 14(35%) had scoring less than 200, 16(40%) had scoring between 201 to

250 and 10(25%) had scoring more than 251 in the index group whereas 20(50%) had scoring less than 200, 15(37.5%) had score beteen 201-250 and 5(12.5%) had scoring more than 251. This difference was statistically not significant.

Regarding stressful events, 23(57.5%) had less than 4 events and 17(42.5%) had life events more than 5 in index group when compared to 30(75%) had less events and 10(25%) had life events more than five. This association was statistically not significant.

Regarding family history of psychiatric illness, among index group 11(27.5%) had positive family history index group and 9(22.5%) had positive family history in control, but statistically no significant difference was noted.

Both group had equal representation in extraversion score, but when Neuroticism score analysed there is statistically significant difference noted. Patients with Neurodermatitis had high Neuroticism (67.5%) compared with Tinea (10%) which showed a high significance.

TABLE 3

TABLE SHOWING NUMBER OF LESION AND DISTRIBUTION OF LESION IN INDEX AND CONTROL GROUP

S.No.	Variables		Index Group (N=40) n	Control Group (N=40) n	Statistical Analysis
1.	Number of Lesion	Single	22	40	x^2= 23.23**
		Multiple	18	0	df = 1
2.	Distribution of Lesion	Face & Neck	2	0	x^2= 46.17**
		Upper Limb	10	4	df = 3
		Lower Limb	28	7	
		Trunk	0	29	

** P <0.01

Regarding number of lesion, 22(55%) had single lesion and 18(45%) had multiple lesions in index group whereas all patients in Tinea had single lesion. The difference was statistically significant.

Regarding distribution of lesion, 2(5%) had in face and neck, 10(25%) had lesions in upper limb and 28(70%) had lesions in Lower limb in Neurodermatitis patients. In the control group, 4(10%) had lesions in upper limb, 7(17.5%) had lesions in lower limb and 29(72.5%) had lesions in Trunk. The difference was statistically significant.

TABLE 4

TABLE SHOWING ANXIETY AND DEPRESSIVE SYMPTOMS IN INDEX AND CONTROL GROUP

S.No.	Variables		Index Group (N=40) n	Control Group (N=40) n	Statistical Analysis
1.	HADS -Anxiety Symptoms	<10	17	33	x^2= 13.65**
		>11	23	7	
2.	HADS – Depressive Symptoms	<10	17	33	x^2= 13.65**
		>11	23	7	
3.	HADS – Total Score	<21	12	36	x^2= 30.00**
		>22	28	4	

** P <0.01

Table 4 shows a comparative analysis of Anxiety score, Depressive Score and Total score based on Hamilton Anxiety Depressive Scale in both index and control group. Regarding Anxiety Score, 23(57.5%) had more than 11 Score in index group whereas 7 (17.5%) had more than 11 score in Control Group. On analysis of Central tendencies, Index group had (Mean = 11.73; SD = 3.49; Range 5-20) and Control group had (Mean 5.95; SD = 3.56; Range 1-13). The difference was statistically significant.

Regarding depressive score 23 (57.5%) had more scores in index group (Mean = 11.33; SD = 3.29; Range 4-18) and 7(17.5%) in Control

group (Mean = 6.63; SD = 3.39; Range = 2-14). The difference was statistically significant.

Regarding Total Score, 28(70%) had high score in Index Group (Mean = 23.05; SD = 4.65) and 4(10%) had high scores in Control Group (Mean = 12.58; SD = 6.23). The difference was statistically significant.

TABLE 5

TABLE SHOWING PSYCHIATRIC MORBIDITY IN PATIENTS WITH NEURODERMATITIS AND TINEA VERSICOLOR

Variable		Neurodermatitis Index Group (N=40)		Tinea Versicolor Control Group (N=40)		Statistical Analysis
		n	%	n	%	
Psychiatric Morbidity	Present	32	80%	14	35%	x^2= 16.57**
	Absent	8	20%	26	65%	df = 1

** P <0.01

Table 5 shows the comparative analysis of psychiatric morbidity in patients with Neurodermatitis and Tinea Versicolor. Among Neurodermatitis patients, 32(80%) had psychiatric illness and 8(20%) had no psychiatric illness. Among patients with Tinea Versicolor, 14(35%) had psychiatric illness and 26(65%) had no psychiatric illness. The difference has been statistically significant and there has been higher prevalence of psychiatric illness in Neurodermatitis compared to controls.

TABLE 6

TABLE SHOWING TYPE OF PSYCHIATRIC ILLNESS IN INDEX AND CONTRLS

Sl.No.	Type of Psychiatric Illness	INDEX GROUP N=40		CONTROL GROUP N=40		Statistical Analysis
		n	%	n	%	
1.	Nil	8	20%	26	65%	x^2= 22.05**
2.	Generalised Anxiety Disorder	11	27.5%	5	12.5%	df = 6
3.	Dysthymic Disorder	4	10%	0	0	
4.	Major Depressive Disorder	8	20%	7	17.5%	
5.	Panic Disorder	3	7.5%	0	0	
6.	Substance Dependance	3	7.5%	2	5%	
7.	Adjustment Disorder	3	7.5%	0	0	

** P <0.01

Table 6 shows comparative analysis of Type of Psychiatric illness in both groups. Among the Neurodermatitis group 11(27.5%) had GAD, 4(10%) had Dysthymic Disorder, 8(20%) had MDD, 3(7.5%) each had panic disorder, substance dependence and adjustment disorder. Among patients with Tinea, 5(12.5%) had GAD, 7(17.5%) had MDD and 2(5%) had substance dependence. None of the patients in control group had Dysthymic Disorder, Panic Disorder and Adjustment Disorder. The difference has been statistically significant. None of the patients in both groups had psychosis.

TABLE 7

TABLE SHOWING COMPARISON OF SOCIODEMOGRAPHIC VARIABLES IN PATIENTS WITH PSYCHIATRIC ILLNESS IN INDEX AND CONTROL GROUP

S.No.	Variables		Neuro dermatitis Indexed Group (N=32) n	Tinea Versicolor Control Group (N=14) n	Statistical Analysis	
					df	Chi-square
1.	Age	<30	1	2	2	x^2= 8.54**
		31-50	12	10		
		>51	19	2		
2.	Sex	Male	12	4	1	x^2 = 0.34
		Female	20	10		
3.	Literacy	Nil	1	0	3	x^2 = 2.39
		Primary	20	6		
		Secondary	10	7		
		> 11 years	1	1		
4.	Socio economic Status	Upper Middle	1	2	3	x^2 = 2.31
		Middle	10	5		
		Lower Middle	18	6		
		Very Low	3	1		
5.	Marital Status	Married	31	14	1	x^2 = 0.45
		Unmarried	1	0		
6.	Domicile	Urban	15	7	1	x^2 = 0.38
		Rural	17	7		

** P <0.01

Table 7 shows comparison of sociodemographic variables and psychiatric morbidity in both groups. Regarding age, as age advances both groups had more risk of psychiatric illness. Among Index Group 12(37.5%) belong to 31-50 years and 19(59.4%) belong to age group

above 51 years. Among controls, 10(71.4%) were between 31-50 years and 2(14.3%) were above the age of 51 years. The difference was statistically significant.

Regarding sex, among patients with psychiatric illness majority were females in both groups. Among neurodermatitis patients with psychiatric illness, 20(62.5%) were females and in Tinea group 10(71.4%) were females. But the difference was statistically not significant.

Regarding education, 20(62.5%) had primary education in Neurodermatitis group with Psychiatric morbidity, 6(42.9%) had primary education in Control Group. The difference was statistically not significant.

On analysis of socioeconomic status, marital status and residence type both groups had equal distribution and the difference was statistically not significant.

TABLE 8

TABLE SHOWING COMPARISON OF AGE, STRESSOR, HOSTILITY, DURATION AND PSYCHOLOGICAL SYMPTOMS IN PATIENTS WITH NEURODERMATITIS AND PSYCHIATRIC MORBIDITY

Sl.No.	Variable	Neurodermatitis with Psychiatric Morbidity (N=32)		Neurodermatitis without Psychiatric morbidity (N=8)		't'
		Mean	S.D.	Mean	S.D.	
1.	Age	51.44	8.96	44.00	7.80	-2.15*
2.	Duration of illness	36.00	26.75	22.25	10.98	-1.41
3.	HDHQ-Total Hostility	30.94	3.23	30.38	2.26	-0.46
4.	HDHQ-Direction of Hostility	19.78	11.18	19.25	4.83	-0.13
5.	PSLE-Scoring	225.16	48.12	225.13	46.62	-0.00
6.	PSLE – Events	4.47	1.16	4.63	0.92	0.35
7.	HADS – Anxiety Symptoms	12.59	3.26	8.25	1.91	-3.59**
8.	HADS – Depressive Symptoms	11.88	3.42	9.13	1.25	-2.22**
9.	HADS –Total Symptoms	24.47	3.94	17.38	2.39	-4.85**

df = 38; * $p<0.05$; ** $p<0.01$

Table 8 shows age of patients with Neurodermatitis who developed psychiatric illness (Mean 51.44 $\pm$ 8.96) was compared to

those who have not developed psychiatric illness (Mean 44.00 ± 7.8). The difference has been statistically significant, indicating advancing age increases psychiatric morbidity. But duration of illness, total hostility, intra-punitive hostility, Life events and scoring did not show any statistically significant difference. Regarding psychological symptoms, anxiety score [Mean 12.59 ± 3.29 Vs 8.25 ± 1.91], Depressive Score [11.88 ± 3.42 Vs. 9.13 ± 1.25] and Total Score [24.47 ± 3.94 Vs 17.38 ± 2.39] has been high in patients with psychiatric morbidity and the difference show statistical significance.

TABLE 9

TABLE SHOWING COMPARISONS OF AGE, STRESSOR, HOSTILITY, DURATION AND PSYCHOLOGICAL SYMPTOMS IN PATIENTS WITH PSYCHIATRIC MORBIDITY IN BOTH GROUPS

Sl.No.	Variable	INDEX GROUP		CONTROL GROUP		't'
		Mean	S.D.	Mean	S.D.	
1.	Age	51.44	8.96	41.21	7.78	3.70**
2.	Duration of illness	36.00	26.75	12.21	7.29	3.26**
3.	HDHQ-Total Hostility	30.94	3.23	22.93	3.65	7.44**
4.	HDHQ-Direction of Hositility	19.78	11.18	10.07	8.48	2.90**
5.	PSLE-Scoring	225.16	48.12	211.00	42.60	0.95
6.	PSLE – Events	4.47	1.16	3.93	0.83	1.57
7.	HADS – Anxiety Symptoms	12.59	3.26	9.14	3.09	3.43**
8.	HADS – Depressive Symptoms	11.88	3.42	9.64	3.54	1.99 *
9.	HADS –Total Symptoms	24.47	3.94	18.79	4.68	4.26**

df = 44; *p<0.05 ** p<0.01

Table 9 shows, on comparison of Age, as age advances there is increase in risk of psychiatric morbidity in Index Group, difference show statistically significance. Neurodermatitis patients presenting with psychiatric illness, have longer duration of illness, have high total

hostility, self directed hostility, anxiety and depressive score compared to Tinea patients and all these differences show statistical significance. But both groups show same patterns of stressful life events and scoring the difference is not significant.

TABLE 10

TABLE SHOWING COMPARISON OF ILLNESS RELATED VARIABLES, FAMILY HISTORY, STRESSORS AND PERSONALITY PROFILE IN PATIENTS WITH PSYCHIATRIC MORBIDITY IN BOTH GROUPS

S.No.	Variable		Index Group (N=32) n	Control Group (N=14) n	Statistical Analysis
1.	Distribution of Lesion	Face & Neck	1	0	x^2= 41.46**
		Upper Limb	6	0	
		Lower Limb	25	1	
		Trunk	0	13	
2.	Number of lesion	Single	17	14	x^2= 9.74**
		Multiple	15	0	
3.	PSLE Scoring	<200	12	5	x^2= 0.49
		201-250	13	7	
		>251	7	2	
4.	Family History	Absent	23	9	x^2= 0.27
		Present	9	5	
5.	Personality Profile	Ambivert	32	12	x^2= 4.78**
		Extraversion	0	2	
		Tendency to be Neurotic	10	13	x^2= 14.79**
		Neuroticism	22	1	

**P < 0.01

Table 10 shows, on comparison of distribution of lesion, both groups, show different distribution pattern and difference was statistically significant. Regarding number of lesions, index group patients had equal representation either as single or multiple lesions,

but in control group none had multiple lesion. The difference was statistically significant. Regarding Life events scoring and family history of psychiatric illness, the difference was statistically not significant.

Regarding personality profile, none of the patients in index group was extraverted and the difference was statistically significant. Majority of the patients in index group 22 (68.8%), had neuroticism profile compared to control group and the difference was statistically significant.

TABLE 11

CORRELATION MATRIX OF AGE, DURATION, STRESSORS, HOSTILITY AND PSYCHOLOGICAL SYMPTOMS IN PATIENTS WITH PSYCHIATRIC MORBIDITY IN BOTH GROUPS

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Q1	1								
Q2	-0.03	1							
Q3	-0.03	0.09	1						
Q4	0.02	0.02	0.37*	1					
Q5	0.08	0.22	-0.16	0.15	1				
Q6	-0.06	0.25	-0.24	0.19	0.89**	1			
Q7	-0.12	-0.12	0.07	-0.05	0.01	-0.06	1		
Q8	0.39*	0.04	-0.01	0.05	0.15	0.21	-0.31	1	
Q9	0.24	-0.07	0.05	0.00	0.14	0.13	0.56**	0.62**	1

*P < 0.05 **P<0.01

Q1 - Age in years
Q2 - Duration of Illness
Q3 - HDHQ – Total Hostility
Q4 - HDHQ – Direction of Hostility
Q5 - PSLE Scoring
Q6 - PSLE Events
Q7 - HADS Anxiety Symptoms
Q8 - HADS Depressive Symptoms
Q9 - HADS Total Symptoms

The psychological symptoms were inter-correlated with Total Hostility, Intrapunitive hostility, Stressors, age and duration of dermatological illness with correlation matrix.

Age had positive correlation with Depressive score suggesting advancing age increases depressive score and increases risk of Depressive disorder. But age did not have positive correlation with anxiety score in our study.

Duration of dermatological illness had no correlation with psychological symptoms or total hostility or sub dimension of hostility and stressors.

Total score of hostility and intra-punitive hostility had no correlation with anxiety or depressive disorder and life events. Total hostility score was correlated with intra-puntivie hostility.

Total scoring in Hospital anxiety and depressive scale, was correlated with Anxiety and Depressive dimensions but show no correlation with stressors or hostility.

Number of stressful life events or scoring was not correlated with hostility and psychological symptom.

DISCUSSION

The study aimed to know the prevalence of Psychiatric Morbidity with Neurodermatitis, to correlate them with stressors, personality profile and physical variables, to compare them with patients with Tinea versicolor. Previous studies have documented the nature and extent of psychopathology in patients with dermatological diseases but there were differences in considering personality profile, hostility and pattern of psychological morbidity. Hence, the study was based on Hypotheses verification design. The study was done on the native population who were attending the Dermatology Outpatient Clinic. Forty patients suffering from Neurodermatitis (ICD10 L 28.0) and forty patients suffering from Tinea versicolor (ICD10 B36.0) were chosen on the basis of strict inclusion criteria. The index group and control group were identified with definite homogenization and comparability. With regard to age, domicile, marital status, education and socioeconomic background there were not much differences.

Prevalence of psychiatric illness in Neurodermatitis patients in this study was 80% which has been found to be more than twice the rate compared to previous studies. Though there is no specific study

which assessed prevalence rate in Neurodermatitis patients, various studies found that among patients with dermatological diseases, prevalence of Psychiatric illness was in the range of 25-43% (Picardi et al. 2001). The prevalence rate found in this study was higher than the rate of 30-40% by Woodruff et al. (1997); 25.2% by Picardi et al. (2000); 33.4% by Aktan et al. (1998) and 22.33% by Mattoo et al. (2005).

Prevalence of Psychiatric illness in patients with Tinea in this study was 35% which has been lower compared to previous studies. Yesim Kaymak et al. (2008) had reported 65% in Tinea patients and Baz et al. (2004), Picardi et al (2000) had reported 65-70% psychiatric illness in Tinea patients. But the rate in our study is higher than reported by Erinfolami et al. (2009) who reported the rate of 18.27% in patients with Tinea versicolor. Comparison of prevalence rate of psychiatric illness in both groups in our study showed that Neurodermatitis patients has higher prevalence rate which is statistically significant than the controls.

In this study, the findings suggest among patients with Neurodermatitis, Dysthymic disorder and major depressive disorder together account for 30% as the most common type of illness followed by 27.5% had generalized anxiety disorder and 7.5% each presented with panic disorder, substance dependence and adjustment disorder.

This trend reflects in various studies done by previous workers. According to Ginsberg (1993) and Koblenzer (1993), Depression and Chronic anxiety were common in Neurodermatitis patients. Depressive disorder was the commonest psychiatric illness followed by anxiety disorder were reported in patients with dermatological diseases by Pulimood et al. (1996); Woodruff et al. (1997); Aslan et al. (2003), Seyhan et al. (2006) and Erinfolami et al. (2009). Substance dependence were found to be absent in their study by Bharat et al. (1997) and Deshpande et al. (1998), but our study showed 7.5% had substance dependence in index group and 5% in Control Group. This finding is lower compared to 20% reported substance dependence by Chaudhury et al. (1998).

Regarding type of illness in Tinea patients 17.5% had Depressive Disorder and 12.5% had anxiety disorders. These rates are lower compared to 30-35% in each type reported by Picardi et al. (2000), Baz et al. (2004) and Yesim Kaymak et al. (2008). On comparison of type of illness across both groups there is higher rate of Depression and anxiety disorder in Neurodermatitis compared to Tinea patients, the difference was statistically significant.

Dermatological patients are at risk for anxiety and depression compared to regular population and there is a need for considering

emotional factors for effective management. Results of this study indicate 57.5% of patients in index group and 17.5% in Control group had significant high anxiety score and the same rate had high depressive score. Further the difference between groups was statistically significant. The results of this study indicate Neurodermatitis patients have higher psychological symptoms and more psychopathology, the findings which was also reflected in previous studies. In the present study, depression score in Neurodermatitis was positively correlated with advancing age which was statistically significant reflecting similar finding reported by Taner et al. (2007) and Yesim Kaymak et al. (2008) who reported that depression as a delayed psychological response to stress. There has been a positive correlation between depression and duration of illness, the two variable move together but movement is not pronounced.

In this study regarding personality profile, Neurodermatitis patients scored high in Neuroticism dimension than Tinea which was statistically significant. On comparison of both groups presenting with psychiatric illness, neurodermatitis patients score higher in Neuroticism dimension and the difference was statistically significant. Further Neurodermatitis patients scored higher in ambiversion and none scored in extraversion. These findings are similar to Ayyar et

al. (1986) and Srivatsava et al. (1997) who found Neurodermatitis patients had higher neuroticism and lower extraversion.

Regarding analysis of stressors, both groups had significant number of life events and scoring; on comparison of patients who presented with psychiatric illness in both groups, they showed similar stressors and the difference was statistically not significant. With regard to family history of psychiatry illness, patients had equal distribution in both groups and the difference was statistically not significant.

In our study, it has been found multiplicity of lesions in Neurodermatitis patients significantly increases risk of psychopathology (83.3%) but not comparable with Tinea as all patients had single lesion. Regarding distribution of lesions, patients with Neurodermatitis who presented with lesions in Lower limb had significantly higher prevalence of psychiatric illness than other sites (89.3%). The study findings are comparable with Picardi et al. (2001) who reported higher rate particularly in female with hand and foot lesions. Seyhan et al. (2006) reported that two thirds of patients presenting with depression in Dermatology department has lesions at visible parts of their bodies.

Comparison of duration of illness in Neurodermatitis patients, those who had psychiatric illness had longer duration of illness compared to those without psychiatric illness. But the difference was statistically not significant. On comparison of duration of illness in both index and control group who presented with psychiatric illness, there is significant higher duration of illness in Neurodermatitis patients. The trend indicate longer the duration of illness in index group increases risk of psychopathology. Similar findings had been observed by Seyhan et al. (2006); and Yesim Kaymak et al. (2008).

Comparison of total hostility and direction of hostility towards self, Neurodermatitis patients irrespective of psychiatric illness had similar higher scores. But on comparison of total hostility and intrapunitive hostility, index group with psychiatric morbidity had significant higher score than control group with psychiatric morbidity. These findings reflect earlier descriptions that Neurodermatitis patients had more suppressed and self directed hostility by Doyle (1953), McLaughlin et al. (1953), Seitz et al. (1953) and Ayyar et al. (1986). In our study, both total hostility and intra-punitive hostility did not have significant correlation with stressors and duration of illness but significantly increases risk of psychopathology.

Regarding socio-demographic variables and its correlation with psychiatric morbidity, the results obtained in the study albeit its limitations due to small sample size, demonstrate some important observations. Among Neurodermatitis patients, 67% of patients between 31-50 years and 95% patients above 51 years had psychiatric illness, the difference was significant compared to younger age as well as with control group. These findings suggest as age advances risk of psychopathology increases in Neurodermatitis. This trend is in accordance with findings by Woodruff et al. (1977) and Seyhan et al. (2006). Advancing age had a positive correlation with depressive symptoms but not with anxiety in our study which is comparable with findings reported by Taner et al. (2007) and Yesim Kaymak et al. (2008).

In our study, the prevalence of psychiatric morbidity is higher in females than males in both groups showing 62.5% in Index group and 71.4% in control group. These findings are similar in previous studies reported by Humphreys et al. (1998) and Picardi et al. (2000). But the difference in both group was not significant.

A large section of sample population belonged to the lower middle socioeconomic status and in this study the majority of patients with psychiatric illness belonged to this category. One is tempted to

make erroneous assumption that psychiatric illness is common in that class. Considering the Government Hospital caters to a large population belong to this category, the results cannot be generalized. On comparison of patients in both groups with psychiatric morbidity and marital status, no significant differences were noticed in our study. This is in contrast to Seyhan et al. (2006) who reported that psychiatric morbidity is higher in married patients. With regards to domicile and educational status, both groups had equal distribution and showed no significant difference.

Correlation of physical variable like age, duration of illness, hostility, stressors and psychological symptoms in both groups who presented with psychiatric morbidity and further statistical analysis in our study indicates, advancing age increases risk of psychiatric illness and increases risk of depression significantly. But stressors do not show correlation with psychiatric morbidity.

From this study, it has been found that psychiatric morbidity is higher in Neurodermatitis patients. Depression and anxiety disorder are the common psychiatric illness in them. Neurodermatitis patients had high neuroticism and higher total hostility and self directed hostility. As age advances risk of psychopathology increases particularly depression and longer duration of illness increases the

risk of psychiatric illness. Though stressors are higher and may predispose psychiatric illness, our study did not show significant difference. Multiple lesions and lesion on the lower limb in Neurodermatitis patients increases risk of psychopathology.

CONCLUSION

The study findings reveal with respect to the hypothesis that

1) Psychiatric morbidity is more in patients with Neurodermatitis compared to patients with Tinea versicolor.
2) Major depressive disorder and dysthmic disorder together present as commonest psychiatric morbidity in Neurodermatitis patients.
3) Psychiatric illness do not have specific association with stressful life events or scoring.
4) Longer the duration of illness increases the risk of psychiatric illness among Neurodermatitis patients.
5) Psychiatric illness is more common in women than in men with Neurodermatitis.
6) Family history of psychiatric illness do not increase risk of psychiatric morbidity in both groups.
7) Higher neuroticism score in personality profile found in Neurodermatitis compared to Tinea versicolor.
8) Total hostility and self directed hostility have been high in patients in the Neurodermatitis compared to Tinea patients.

Based on the findings in our study, it is understandable that dermatological patients have a high risk of psychiatric illness and when emotional factors are not addressed adequately, the morbidity of these patients may increase. Early recognition and treatment of psychiatric illness by involving Psychiatrist as a team member in the dermatology clinic may lead to a better outcome. Further studies to characterize pattern of psychiatric morbidity and their impact on daily living and longitudinal studies to observe improvement with pharmacotherapy and psychotherapy are necessary.

BIBLIOGRAPHY

Ader, R., Coen, N., Pelten, D.L. (1995). Psychoneuroimmunology: Interaction between the nervous system and immune system. The Lancet, 345:99.

Aktan, S., Ozmen, E., Sanli, B. (1998). Psychiatric disorders in patients attending a dermatology outpatient clinic. Dermatology; 197(3):230-4.

Akay, A., Pekcanlar, A., Bozdag, K.E., Altintas, L., Kraman, A. (2002). Assessment of Depression in subjects with Psoriasis Vulgaris and Lichen Planus. J. Eur. Acad. Derm Ven : 16(4) : 347-52.

Allerhand, M.E., Gough, H.G., Garis, M.L. (1950). Personality factor in Neurodermatitis. Psychosom. Med. 12 : 387.

Anand, P., Springel, D.R., Blank, M.A., (1991). Neuropeptides in skin disease. Br. J. Der: 124:547-9.

Aslan, S., Candansayar, S., Cosar, B. (2003). Yeni Symposium; 41(1):31-8.

Attah Johnson, F.Y., Mostaghimi, H (1995). Comorbidity between dermatological diseases and psychiatric disorders in Papua New guinea. Int. J. Dermatol: 34 : 244-248.

Ayyar, K.S., Bagadia, V.N. (1986). A controlled study of psychosocial factors in Neurodermatitis. Ind. J. Psychiatry 28(2):155-158.

Bagadia, V.N., Ayyar, K.S., Pradhan, P.V (1998). Life Stress in dermatology outpatients. Arch. Ind. Psychiatry : 4 : 47-49.

Ball, S.B., Wojnarowska, F. (1998). Vulvar Dermatosis. Semin Cutan Med Surg : 17: 182-8.

Baz, K., Yazici, A.E., Kokhiirk, A., Yazici, K., Demirseren, D.D., Okyay, Y. (2004). Increased levels of anxiety and depression correlated with Dermatology Life Quality Index Scores in Dermatology outpatients. Turkish Cli. J. Derm, 14, 31-37.

Bharath, S., Shamsundar, C., Raghuram, R., Subbakrishna, D.K., (1997). Psychiatric Morbidity in Leprosy and Psoriasis – a comparative study. Ind. J. Lepr.; 69:341-346.

Bhatia, M.S., Gautam, R.K., Bedi, G.K. (1996). Psychiatric Profile of Patients with Neurodermatitis. J. Indian Med. Associ : 94(12)445-6.

Brunsting, L.A.(1936). Atopic dermatitis of young adults. Arch. Dermat. Syp. 70:261.

Chaudhury, S., Das, A.L., Ranjan John, T., Ramadasan, P. (1998). Psychological factors in Psoriasis : 40: 295-299.

Cohen, S., Kessler, R.C. Underwoor, G.L., (1995). Strategies for measuring stress in studies of psychiatic and physical disorders, New York, Oxford Univ. Press.

Cormia, F.E. (1950) : The Role of Psychosomatic factors in Dermatoses. Connecticut State Med. J., 14 : 1051.

Cotteril, J.A., Cunliffe, W.J. (1997). Suicide in Dermatological patients. Br. Dermatol; 137(2) : 246-50.

Deshpande, N., Desai, N., Mundra, V.K. (1998). Psychiatric aspects of Psoriasis. Arch. Ind. Psychiatry: 4: 61-64.

Doyle, L. Thomas (1953). Psychiatric aspects of Neurodermatitis. The Bulletin; 570-576.

Engel, D.W., Wittkower, E.D. (1975). In Comprehensive Text book of Psychiatry II Ed., Freeoman, A.M., Kaplan and Sadock.

Erinfolami, Adebayo, R., Adeyemi, D. Joseph (2009). A case control study of psychiatric morbidity among subjects with Leprosy in Logos, Nigeria. The Int. J. of Psychiatry in Medicine; 39(1) : 89-99.

Fiske, C.E., Obermayer, M.E. (1954). Personality and Emotional factors in chronic Disseminated Neurodermatitis. Arch. Dermat. Syph., 60:261.

Freid, R.G. (1994). Evalution and treatment of psychogenic pruritis and Self excoriation. J. Am. Academy Dermatology; 30 : 993-9.

Freid, R.G. (2002). Non Pharmacological treatment in Psychodermatology. Dermatology Clinic : 177-85.

Gilberstadt, Harold (1961). A novel MMPI profile type in Neurodermatitis. J. Psychosomatic Medicine Vol. 26 : No.5.

Ginsburg, I.H., et al (1993). Role of emotional factors in adults with atopic dermatitis. Int. J. Dermatol : 32: 656-660.

Ginsburg, J.H. (1996). The psychosomatic impact of skin disease. Derm. Clinics; 14(3) : 473-84.

Gould, W.M. (2004). Teaching psychocutaneous medicines : time for a reappraisal. Arch. Dermatol. 140(3) : 282-285.

Gupta, A.K., Batra, R., Bluhm, R., Boekhout, T., Dawson, T.L. (2004). Skin diseases associated with Map assezia species. J. Am. Ac.Derm. 51,785-798.

Gupta, A.K., Nicol, K., Johnson, A (2004). Pityriasis Versicolor : Quality of Studies. The J. Derm. Treatment, 15, 40-45.

Gupta, L.N., Bhatia, B.L., Godara, R.C., Vyas, J.N., Singhal, S. (1981). Life events, Physical illness and Psychiatric Morbidity. Ind. J. Psy : 23(4) : 338-342.

Gupta, M.A., Gupta, A.K. (1995). Age and Gender differences in the impact of psoriasis upon the quality of life. Int. J. Dermatol 34: 700-703.

Gupta, M.A., Gupta, A.K. (1998). Depression and Suicidal ideation in dermatology patients with Acne, alopecia areata, atopic dermatitis and psoriasis : Br.J. Dermatol: 139 : 846-850.

Gurmeet Singh, Dalbir Kaur, Harsharan Kaur (1984). Presumptive Stressful Life events Scales (PSLES). A new stressful life events scale for use in India; Indian J. Psychiatry, 26(2), 107-114.

Higgins, E.M., Du Vivier, A.W., (1994). Cutaneous disease and alcohol misuse. Br. Med. Bull., 50: 85-98.

Holter, R.F., Burgoon, C. (1961). Psychological consideration of skin in childhood. Paed. Clin. North. Am. 8 : 719-736.

Humphreys, F., Humphreys, M.S. (1998). Psychiatric Morbidity and Skin disease : what dermatologist think they see ; Br. J. Derm. 139:679-81.

Ingram, J.T. (1933) : The Personality of the Skin. Lancet, 1:889.

Jublin, L. (1981). Recurrent Urticaria : Clinical investigations of 330 patients. Br. J. Dermatol 104: 369-381.

King, R.M., Wilson, G.U (1991). Use of a diary technique to investigate psychosomatic relations in atopic dermatitis. J. Psychosom. Res. 35:697-706.

Koblenzer, C.S. (1983). Psychosomatic concepts in dermatology; Arch. derm. 119 : 501-512.

Koblenzer, C.S. (1993). Psychiatric Syndromes of interest to dermatologists. Int. J. Dermatol : 32: 82-8.

Kuruvilla, Maria., Pratik Gahalaut, Asha Zacharia (2004). A Study of Skin disorders in patients with primary psychiatric conditions, Indian J. Dermatol. Venerolo. Leprol. 292-295.

Levin, O.L. and Behrman, H.T. (1946). Neurodermatitis and Occupational Dermatitis, N.Y. St.J. Med. 46:2160-63.

Lynch, P.J. (2004). Lichen Simplex Chronicus of Anogenital region. Dermat. Ther : 17:8-19.

Lyon, N., Fitzpatrick, T. (1993). Geriatric Dermatology Dermatology in Gen. Medicine Vol. II New York : McGraw-Hill : 2966.

Mackenna, R.M.B. (1944). Personality types in Skin disorders. Lancet, 2, 679.

Marmor, J., Ashley, M., Tabachnik, N., Starkan, M., MacDonald, D.F., (1958). Mother child relationship in the development of Neurodermatitis. Year book of Dermatology and Syphilology.

Mattoo, S.K., Sanjeev Handa, Inderjee Kaur, Nitin Gupta, Ramma Malhotra (2005). Psychiatric Morbidity in Psoriasis : Prevalence and Correlates in India. Ger. J. Psychiatry : 8 : 17-22.

Mattoo, S.K., Handa, S., Kaur, I., Gupta, N., Malhotra, R. (2002). Psychiatric morbidity in Vitiligo : prevalence and correlates in India. Journal of European Academy of Derm. & Ven; 15(6) : 573-78.

McLaughlin, J.T., Shoemaker, R.J., and Guy W.B. (1953) Personality factors in Adult Atopic Eczema. Arch. Dermato. & Syph., 68 : 506.

Medansky, R.S., Handler, R.M. (1981). Dermatopsychosomatics : J. Am Acad Dermatol. 5(2) : 125-136.

Melen, L.A., Vallee, J., Feldman, S.R., Fleischer, A.B. (2004). Treatment of Pityriasis Versicolor in the United States. J. Derm. Treatment 75, 189-192.

Mercan., Sibel., Kivancaltunay., Ilknor. (2006). Psychodermatology : A collaborative subject of Psychiatry and Dermatology. Turkish Journal of Psychiatry : 17(4).

Miller, M.L. (1948). Psychodynamic mechanism in a case of Neurodermatitis. Psychosomatic Medicine, 10 : 309-315.

Obermayer, M.E., (1961) : Dynamics and Management of Self Induced Eruptions. Calif. Med., 94:61.

Obermayer, M.E., Blair, C.E., Fiske, C.E., Lavitt, H., Rush, S., Strokan, M.A. (1952). Correlation of emotional states and reactivity to cutaneous stimuli in functional dermatoses. Arch. Dermat. Syph. 65 : 291.

Picardi, A., Abeni, D., Melchi, C.F. (2000). Psychiatric Morbidity in dermatology outpatients – an issue to be recognized. Br. J. Derm; 143:983-91.

Picardi, A., Abeni, D., Renzi, C. Braga, M., Melchi, C.F., Pasquini, P. (2005). Treatment outcome and incidence of psychiatric disorders in dermatological outpatients. J. Europ. Acad Derm Venerology ; 17(2) : 155-9.

Picardi, A., Amerio, P., Baliva, G., Barbieri, C., Teofoli, P., Bolli, S., et al. (2004). Recognition of Depressive and anxiety disorder in dermatological outpatients. Acta. Derm. Venerol; 84(3) : 213-7.

Picardi, A., Diamano, A., Renzi, C., (2001). Increased psychiatric morbidity in female outpatients with skin lesions on visible parts of the body. Acta. Derm. Venrol; 81:410-4.

Pulimood, S. Rajagopalan, B., Rajagopalan, M. (1996). Psychiatric Morbidity among dermatology inpatients. Nat. Med. J. India; 9 : 208-210.

Rechardt, Eero (1970). An investigation in the Psychosomatic aspects of Prurigo Besnier. Monograph from the Psychiatric clinic of the Helsinki University Central Hospital, No.2, Finland.

Rubino, I.A., et al. (1989). Seperation Individuation, aggression and alexithymia in psoriasis. Acta. Derm. Venerol; 146:87-90.

Saul, L.I. (1938). Incidental observation in Pruritis ani. Psychoanalytic Quarterly VII.

Scarborough, L.F. (1948). Neurodermatitis from a Psychosomatic viewpoint, Dis. Nerv. System. 9 : 90-93.

Seitz, P.F.D. (1952). Dynamically oriented Brief Psychotherapy : Psychocutaneous Excoriation Syndromes, an Experiment. Psychosom. Med., 15 : 200.

Selye, H (1949). General adaptation syndrome and the disease of adaptation. Practitioner, 163(977) : 393-405.

Seyhan, Maummer, Tubaaki, Yelda Karincaoglu., Hamdi Ozcan (2006). Psychiatric Morbidity in Dermatology patients. Frequency and Results of consultations. Ind. J. Dermat.; 51(1): 18-22.

Srivatsava, O.N., Bhat, V.K., Gurmohan Singh (1997). Personality profile in Neurodermatitis. Indian J. Psychiatry : 19(2), 71-76.

Taner, E., Cosar, B., Burhanoglu, S., Calkogio, E., Onder, M., Arkan, Z. (2007). Depression and anxiety in patients with BEHCET's disease compared to patients with psoriasis. Int. J. Derm. 46(11), 1118-1124.

Thomson, K.F., Highet, A.S. (2001). 5% Doxepin Cream to treat persistent Lichenification in a child. Clin. Exp. Dermatol. 26:100.

Von Moffaert, M (1992). Psychodermatology : an overview. Psychotherap. Psychosom, 58:125-136.

Weigl, B.A. (2000). The significance of stress hormone, Glucocorticoid, catecholamines for eruptions and spontaneous remission phases in psoriasis. Int J. Dermat. 37; 678-688.

Weyers, W. (1995). Lichen Amyloidosis – disease entity or effect of scratching. Hautarzt : 46 : 165-172.

Woodruff, P.W. Higgins, E.M., du Vivier, A.W., Wessely, S. (1997). Psychiatric illness in patients referred to dermatology-psychiatric clinic. Gen. Hosp. Psychiatry 19 : 29-35.

Yesim Kaymak., Ender Taner., (2008). Anxiety and Depression in patients with pityriasis rosea compared to patients with Tinea Versicolor. Dermatology Nursing : 10: 2008.

Zigmond, A.S., Snaith, P.R., (1983). The Hospital anxiety and depression scale. Acta psychiatrica Scandinavica, 67, 361-370.

APPENDICES

APPENDIX - I

PROFORMA

S.No: Date:

Name:

Address:

Age: Sex: Male / Female

Education: Occupation:

Income:

Marital Status: Married / Unmarried Residence: Rural/ Urban

Complaints:

History of Medical Illness:

History of Psychiatric Illness:

Family history of Psychiatric illness:

Personal History:

Past History

Clinical Diagnosis: ICD_{10}:

Illness history Duration of illness:
Site of Lesion:
No of Lesion:

Clinical illness: CVS: RS:

Abdomen; CNS:

Laboratory examination

Blood: Urine:
Bio chemistry:

APPENDIX – II

MINI NEUROPSYCHIATRIC INTERVIEW

GENERAL INSTRUCTIONS :

The M.I.N.I was designed as a brief structured interview for the major Axis I psychiatric disorders in DSM-IV and ICD-10. Validation and reliability studies have been done comparing the M.I.N.I to the SCID-P for DSM-III-R and the CIDI (a structured interview developed by the World Health Organization). The results of these studies show that the M.I.N.I has similar reliability and validity properties, but can be administered in a much shorter period of time (mean 18.7 $\pm$ 11.6 minutes, median 15 minutes) than the above referenced instruments. It can be used by clinicians, after a brief training session. Lay interviewers require more extensive training.

GENERAL FORMAT :

The M.I.N.I. is divided into modules identified by letters, each corresponding to a diagnostic category.

- At the beginning of each diagnostic module (except for psychotic disorders module), screening question(s)

corresponding to the main criteria of the disorder are presented in a gray box.

- At the end of each module, diagnostic box(es) permit the clinician to indicate whether diagnostic criteria are met.

RATING INSTRUCTIONS

All questions must be rated. The rating is done at the right of each question by circling either Yes or No. Clinical judgment by the rater should be used in coding the responses. Interviewers need to be sensitive to the diversity of cultural beliefs in their administration of questions and rating of responses. The rater should ask for examples when necessary, to ensure accurate coding. The patient should be encouraged to ask for clarification on any question that is not absolutely clear.

The clinician should be sure that each dimension of the question is taken into account by the patient (for example, time frame, frequency, severity, and / or alternatives). Symptoms better accounted for by an organic cause or by the use alcohol or drug should not be coded positive in the M.I.N.I.

APPENDIX - III

Socio – Economic Scale

Scoring / Indicators

I) Education Score :

a) Score of Self for adults.

b) Score of the guardian for children upto the 20 years.

II) Income Score

Total monthly income of the family members living together.

III) Occupational Score

It takes into consideration financial dependency as well as marital status of the individual :

a) Unmarried subjects (including widowed & separated)

i) Working individual – occupational score of the self.

ii) Neither working nor dependents – 50% of the sum of educational and income score.

iii) Non-working dependants – 50% of the sum of educational and income scores.

B) Married Subjected

i) Both spouses non-working (dependent) – 50% of the occupational score of the guardian upon whom mainly dependent.

ii) Both spouses non-working but not dependent – 50% of the sum of the scores of education and income.

iii) Only one spouse working – Score of the working spouse.

iv) Both spouse working – Score of the spouse having higher occupational position.

Scoring Manual

Sl.No.	Educational Categories	Score
1.	Upto Vth Class	20
2.	Less than High School	40
3.	High School	60
4.	Intermediate	80
5.	Graduation (excluding professional subjects*) or technical diploma	100
6.	Post-graduation excluding professional subjects	120
7.	Post-graduate diploma in non-professional subjects; B.E., B.Tech., B.Arch., MBBS, BMBS, BIMS, MDH, BDS, LLB	140
8.	Post graduate diploma or degree in professional subjects Ph.D.	160
9.	D. Litt, DSc or Equivalent; award of membership or fellowship from professional institutions of International recognition	180
10.	National or international award for the academic or scientific achievements	200

*Engineering, Medicine and Law

Sl.No.	Income (Rs.)	Score
1.	Upto 250	
2.	251-500	40
3.	501-750	60
4.	751-1000	80
5.	1001-1500	100
6.	1501-2500	120
7.	2501-5000	140
8.	5001-10,000	160
9.	10,000-15,000	180
10.	Above 15,000	200

Sl.No.	Occupational Groups	Score
	1. Skilled and Semi-Skilled	
1.1	Semi-skilled or unskilled workers (e.g.barber, shoemaker, gardener, and others of low skilled or unskilled labour)	40
1.2	Skilled workers (drivers, painters, mechanics, printers, watch repairers, typist, plumbers and equivalent)	60
1.3	Skilled Workers of higher rank or having special training	80
	2. Office work and Equivalent	
2.1	Peon, Chowkidar, Constable or equivalent.	40

2.2	Junior grade office assistant, dispatcher, head constables or equivalent	40
2.3	Senior grade office assistant, sub inspector, or lower grade inspectors (e.g. sanitary inspector, supervisors in private or public organization	80
	3. Teaching Jobs	
3.1	Teachers of primary and Junior High School	60
3.2	Teachers of High School or Intermediate (excluding Principal of Intermediate College)	80
3.3.	Lectures and readers in the University or equivalent, principal of Intermediate College	100
3.4	University professors and principals of degree or post-graduate college	120
3.5	Eminent professors having national or international recognition	160
	4. Business	
4.1	Petty business and small shop-keepers	60
4.2	Middle class businessman	80
4.3	Businessman or industrialist of upper strata	100
4.4	Eminent businessman in the town or city	120
4.5	Eminent industrialist in the state or country	160
	5. Professional jobs (medicine, law and engineering)	5.1
5.1	Individuals in the profession of medicine Law or Technology having no recognized training	60
5.2	Qualified professional having no specialization	80
5.3	Specialist in the professional jobs	100

5.4	Senior Grade specialist	120
5.5	Eminent professionalists in the field	160
	6. Semi-professional	
6.1	Junior grade technical or scientific assistants, lower grade semiprofessionals (pharmacists and nursing staff)	60
6.2	Senior grade technical or scientific assistants and the semi-professionals of average grade (psychologists, statisticians, social workers, surveyors, etc.)	80
6.3	Scientist employed as Class I and Class II in the Central Govt. or equivalent employees in either organizations, assistant or joint director or vice-principal in the technical institutions	100
6.4	Directors and Principals in technical institutions	120
6.5	Directors of highly prestigious technical institutions and / or scientist of international recognition	160
	7. Artist and Literary men	
7.1	Low grade artists, actors, writers, religious pandits, palmists and similar other having little expertise	60
7.2	Individuals of above category having considerable expertise	80
7.3	Experts of above categories having high social image	100
7.4	Most eminent writers, poets, magicians, religious figures, artists and actors	120

	8. Agriculture (This category was included because some urban residents may have agriculture or orchard as their main source of livelihood)	
8.1	Small size holding of agriculture or orchard which can hardly meet the basic needs of a family.	60
8.2	Medium size holding or agriculture or orchard sufficient for average middle class family in an urban setup	80
8.3	Large size holding of the above mature which can comfortable meet the requirements of an upper middle class family	100
8.4	Agriculturist or fruit grower of very large size holding	120
	9. Administrative Service	
9.1	Office Superintendent, Section Officers, Inspectors (e.g., Police, Sales Tax, Income Tax, etc.) Junior PCs, Officers including Tasildhar and equivalent	100
9.2	IAS and equivalent services (e.g. IPS, IFS, ISS or Senior PSC)	120
9.3	Senior IAS and equivalent, Vice-Chancellor, Director – General, Heads of Prestigious institutions	140
	10. Judicial Service	
10.1	Munsif, Honorary magistrate or equivalent	100
10.2	District and Senior Judge	120
10.3	Judges of High Court	140

	11. Political Leaders	
11.1	Leaders of district level (block Pramukh, Corporation or Equivalent)	100
11.2	M.P., M.L.A., M.L.C., District Chairman and City Mayor	120
11.3	Mayor of Metropolitan City, State Ministers and Union Deputy Ministers and other political headers of equivalent level	140

Social Status Categories

On the basis of sum scores of the three variables, an individual's status can be ascertained from the following table :-

Status Category	Total Score	Major Social Class	Its description
1.	476 and above	Very high	Individuals of most prestigious social position, mainly consisting of top-most businessmen, politicians, administrators, scientists, professional men or higher distinguished persons in the other fields.
2.	426-475	Very high	Same as above
3.	376-425	Upper middle	Individuals of above categories having obviously higher social position but not belonging to the top most category in their specialities. Their standard of living is definitely of a superior class and as such they would constitute only a small percentage of our urban society.
4.	326-375	Upper Middle	Same as above
5.	276-325	Middle Class	Individuals of average social class belonging to different occupational groups. Their standard of living is quite satisfactory although inferior to the upper middle class. Their invidual scores on the 3 variable are likely to be in the range of 80 to 100

6	226-275	Middle Class	Same as above
7	176-225	Lower Middle	Majority of urban subjects are likely to belong to this category. Their substandard of living makes their existence on urban society a marginal one. Their individual scores on the 3 variables usually range between 60 to 80
8	126-175	Lower Middle	Same as above
9.	76-125	Very Low	These individuals are characterized with lower standard of living. Their educational, occupational as well as financial position is almost at the lowest level and as such they belong to the most disadvantageous class having very little to survive.
10.	Upto 75	Very Low	Same as above.

APPENDIX – IV

PRESUMPTIVE STRESSFUL LIFE - EVENTS SCALE

Name Age Sex Date :

1.	Going on a pleasure trip or pilgrimage (20)	( )
2.	Wife begins or stops work (25)	( )
3.	Change in eating habits (27)	( )
4.	Change in Social Activities (28)	( )
5.	Reduction in number of family functions (29)	( )
6.	Gain of new family member (30)	( )
7.	Birth of Daughter (30)	( )
8.	Change in sleeping habits (33)	( )
9.	Change in working conditions or transfer (33)	( )
10.	Retirement (35)	( )
11.	Begin or end schooling (36)	( )
12.	Outstanding personal achievement	( )
13.	Change or expansion of business	( )
14.	Change in residence (39)	( )
15.	Unfulfilled commitments (40)	( )
16.	Trouble with neighbour (40)	( )
17.	Getting married or engaged (43)	( )
18.	Appearing for examinations or interview (43)	( )
19.	Failure in examination (43)	( )

20. Death of pet (44) ( )

21. Major purchase or construction of house (46) ( )

22. Breakup with friend (47) ( )

23. Family conflict (47) ( )

24. Minor violation of Law (48) ( )

25. Marriage of daughter or dependent sister (49) ( )

26. Large Loan (49) ( )

27. Lack of Son (51) ( )

28. Self of family member unemployed (51) ( )

29. Sexual problems (51) ( )

30. Conflict over dowry (self or spouse) (51) ( )

31. Pregnancy of wife (wanted or unwanted) (54) ( )

32. Prophecy of astrologer or palmist etc. (59) ( )

33. Trouble at work with colleague, superiors or subordination ( )

34. Illness of family member (52) ( )

35. Financial loss or problems (54) ( )

36. Son or daughter leaving home (55) ( )

37. Major personal illness or injury (56) ( )

38. Broken engagement or love affair (57) ( )

39. Conflict with in-laws (other than dowry) (57) ( )

40. Robbery or theft excessive alcohol or drug use by family member

41.	Robbery or theft (59)	( )
42.	Death of friend (60)	( )
43.	Property or crops damaged (61)	( )
44.	Marital Conflict (64)	( )
45.	Death of close family member (66)	( )
46.	Lack of child (67)	( )
47.	Determination in Jail of Self or close family member (78)	( )
48.	Suspension or dismissal from Job (76)	( )
49.	Marital Separation / divorce (77)	( )
50.	Extra marital relation of spouse (80)	( )
51.	Death of spouse (95)	( )

Total number of life events present ( )

Total Score ( )

APPENDIX – V

HOSTILITY AND DIRECTION OF HOSTILITY QUESTIONNAIRE

E-I ATTITUDE SCALE

The following statements are intended to indicate your interests and attitudes. This is not an intelligence test and there are no right and wrong answers. Draw a circle around "T" if you find a statement true and draw a circle around? Keep the number of "?" answer as low as possible.

2. TF? I Commonly TF?
3. I get angry sometimes [AH]
4. TF? I am entirely self confident [SC]
5. TF? I sometimes tease animals [AH]
6. TF? Most people are honest chiefly through fear of being caught [CO]
7. TF? I know who is responsible for most of my troubles [DH]
8. TF? I usually expect to succeed in thing I do [SC]
9. TF?I do not blame anyone for trying to grab everything he can get in this world [AH]
10. TF? I have often lost out on things because I could not make up my mind soon enough [SC]

11. TF? Much of the time I feel as if I have done something wrong or evil [DG].
12. TF? I am easily downed in an argument [AH] & [SC}
13. TF? I have very few quarrel with members of my family [CD]
14. TF? I have several times given up doing a thing because I thought too little of my ability [SC].
15. TF? I wish I could get over worrying about things I have said that my have injured other people's feelings [DG]
16. TF? I get mad easily and then got over it soon [AH]
17. TF? When someone does me a wrong I feel I should pay him back if I can, just for the principle of the thing [CO].
18. TF? I am sure I get a raw deal from life [DH].
19. TF? I shrink from facing a crisis or difficulty [SC]
20. TF? It is safer to trust nobody [CO]
21. TF? At times I think I am no good at all [DG]
22. TF? Some of my family have habits that brother and annoy me very much [CO]
23. TF? At times I have a strong urge to do something harmful or shocking [AH].
24. TF? I thing most people would lie to get ahead [CO]
25. TF? Someone has been trying to rob me [DH]

26. TF? I have sometimes felt that difficulties were piling up so high that I could not overcome them [SC]
27. TF? I have not lived the right kind of life [DG].
28. TF? I can easily make other people afraid of me, and sometimes do so for the fun of it [AH].
29. TF? Most people make friends because friends are likely to be useful to them [CO]
30. TF? Most people make friends because friends are likely to be useful to them.
31. TF? At times I feel like picking a fist fight with someone [AH]
32. TF? Often I cannot understand why I have been so cross and grouchy [SC]
33. TF? Some people are so bossy that I feel like doing the opposite of what they request, even though I know they are right [CO]
34. TF? I believe I am being followed [DH]
35. TF? I seem to be about as capable
36. TF? My hardest battles are with myself [SC]
37. TF? In School I was sometimes seet to the principal for misbehaving [AH]
38. TF? I think nearly anyone would tell a lie to keep out of trouble [CO]
39. TF? If people had not had it in for me I would have been much more successful [DH]

40. TF? I believe I am a condemned person [DG]
41. TF? Sometimes I feel as if I must injure either myself or someone else [AH]
42. TF? I do not blame a person for taking advantage of someone who lays himself open to it [CO].
43. TF? I certainly feel useless at times [LG}
44. TF? Sometimes I enjoy hurting persons I love [AH]
45. TF? I easily become impatient with people [AH]
46. TF? I have often found people jealous of my good ideas, just because they had not thought of them first [CO]
47. TF? Someone has it in for me [DH]
48. TF? I believe my sins are unpardonable [DG]
49. TF? I believe I am being plotted against [DH]
50. TF? I am certainly lacking in self confidence [SC]
51. TF? At times I feel like smashing things [AH]
52. TF? I have at times stood in the way of people who were trying to do something not because it amounted too much but because of the principle of the thing. [CO]

ATTITUDE : SCORING KEY

1.	T	11. T	21. T	31.T	41.T
2.	F	12. F	22. T	32.T	42. T
3.	T	13. F	23. T	33. T	43. T
4.	T	14. T	24. T	34. F	44. T
5.	T	15. T	25. T	35. T	45. T
6.	F	16. T	26. T	36. T	46. T
7.	T	17. T	27. T	37. T	47. T
8.	T	18. T	28. T	38. T	48. T
9.	T	19. T	29 F	39. T	49. T
10.	T	20. T	30. T	40. T	50. T
51.	T				

1. Acting out Hostility [AH] [13]

   1,3,7,11,15,22,27,30,36,40,43,44,50

2. Delusional Hostility [DH]

   5,8,17,24,29,33,46,48 [9]

3. Criticism of Others [CO]

   4,12,16,19,21,23,28,32,37,41,45,51 [12]

4. Delusional Guilt [DG]

   10,14,20,26,39,42,47 [7]

5. Self Criticism [SC]

   2,6,9,11,13,18,25,31,34,35,49 [11]

   Hostility : 1+2+3+4+5

   Direction of Hostility : [2x5+4]-[1+2+3]

EPI SCORING KEY – ANNAMMA ABRAHAM (1977)

Annamma Abraham, in J. Psychiat (1977), 19(2) 60-66

Extraversion		**Neuroticism**		**Lie Score**	
1.	Yes	2.	Yes	6.	Yes
3	Yes	4.	Yes	12.	No
5	No	7.	Yes	18	No
8	Yes	9	Yes	24	Yes
10	Yes	11	Yes	30	No
13	Yes	14	Yes	36	Yes
15	No	16	Yes	42	No
17	Yes	19	Yes	48	No
20	No	21	Yes	54	No
22	Yes	23	Yes		
25	Yes	26	Yes		
27	Yes	28	Yes		
29	No	31	Yes		
32	No	33	Yes		
34	No	35	Yes		
37	No	38	Yes		
39	Yes	40	Yes		
41	No	43	Yes		
44	Yes	45	Yes		
46	yes	47	Yes		
49	Yes	50	Yes		
51	No	52	Yes		
53	Yes	55	Yes		
56	Yes	57	Yes		

Lic = 4

Neuroticism Mean = 11.6 $\pm$ 4. 6

Extraversion Mean = 11.3 $\pm$ 3.5

EYSENCK PERSONALITY INVENTRY

Name: Age: Sex: Date:

Address:

கீழ்க்கண்ட கேள்விகளுக்கு "ஆம்", "இல்லை" என்று பதில் மட்டும் கூறவும்:-

1 நீ அடிக்கடி மனக்குதூகலத்திற்காக ஏங்குகிறாயா? ஆம்/இல்லை

2 உன்னை நன்கு அறிந்த தன்மையுள்ள நண்பர்கள் உன்னை மகிழ்விப்பது அடிக்கடி உனக்குத் தேவைப்படுகிறதா? ஆம்/இல்லை

3 நீ பொதுவாக கவலையற்று இருப்பவனா? ஆம்/இல்லை

4 'இல்லை" என்று பதிலை ஏற்றுக் கொள்ள உனக்கு சிரமமாக உள்ளதா? ஆம்/இல்லை

5 எதைச் செய்யும் முன்பும் அதனை நின்று நிதானித்து யோசக்கிறாயா? ஆம்/இல்லை

6 ஏதோ ஒன்றைச் செய்வேன் என்று நீ ஒரு வாக்குறுதி கொடுத்தால் அதனை நிறைவேற்ற எத்துனை சிரமங்கள் ஏற்படினும் கொடுத்த வாக்கை நிறைவேற்ற முற்படுவாயா? ஆம்/இல்லை

7 உன் மனோநிலை அடிக்கடி மாறும் தன்மையுடையதா? ஆம்/இல்லை

8 முன் யோசனையின்றிப் பொதுவாகக் காரியங்கள் செய்வதுண்டா? ஆம்/இல்லை

9 காரணமின்றிச் சோர்வடைந்து போகின்றாயா? ஆம்/இல்லை

10 நீ எதையும் துணிந்து செய்கின்றாயா? ஆம்/இல்லை

11 கவர்ச்சியுள்ள அன்னியரிடத்தில் பேசும்போது திடீரென்று நாணமடைவது உண்டா? ஆம்/இல்லை

12 எப்போதோ சில வேளைகளில் கட்டுப்பாட்டை மீறி கோபமடைவதுண்டா? ஆம்/இல்லை

13 அடிக்கடி காரியங்கள் நினைத்த மாத்திரத்திலேயே செய்கிறாயா? ஆம்/இல்லை

14 நீ செய்ய அல்லது பேசக்கூடாத காரியங்கள் குறித்து அடிக்கடி கவலைப்படுவதுண்டா? ஆம்/இல்லை

15 பொதுவாக மக்களைச் சந்திப்பதைக் காட்டிலும் புத்தகங்களைப் படிப்பதை விரும்புகிறாயா? ஆம்/இல்லை

16 நீ சீக்கிரத்தில் வருத்தமடைகிறாயா? ஆம்/இல்லை

17 அதிகம் வெளியில் சுற்றுவதற்கு விரும்புகிறாயா? ஆம்/இல்லை

18	மற்றவர்கள் தெரிந்து கொள்ளக்கூடாத யோசனைகளும் சிந்தனைகளும் உனக்கு ஏற்படுகின்றனவா?	ஆம்/இல்லை
19	சோம்பலாகவோ அல்லது சில சமயங்களில் சுறுசுறுப்பாகவோ இருக்கிறாயா?	ஆம்/இல்லை
20	நீங்கள் சில ஆனால் விசேஷித்த நண்பர்களையே அடைய விரும்புகிறீர்களா?	ஆம்/இல்லை
21	நீங்கள் ஏராளமாய் பகல் கனவு காண்பதுண்டா?	ஆம்/இல்லை
22	உன்னைப் பிறர் நிந்திக்கும்போது பதிலுக்குப்பதில் செய்ய விரும்புகிறாயா?	ஆம்/இல்லை
23	குற்ற உணர்ச்சியால் அடிக்கடி நீ பாதிக்கப்படுகிறாயா?	ஆம்/இல்லை
24	உன் பழக்க வழக்கங்கள் எல்லாம் நல்லவனவாகவும் எல்லோரும் விரும்புகின்றனவாகவோ உள்ளனவா?	ஆம்/இல்லை
25	களியாட்டங்களுக்குச் செல்லவும் (சாதாரணமாக) மிக்க மகிழ்ச்சியோடு இருக்கவும் உன்னால் முடிகிறதா?	ஆம்/இல்லை
26	உன்னை நீ எப்பொழுதும் மன உளைச்சலில் இருப்பவன் என்று நினைக்கிறாயா?	ஆம்/இல்லை
27	நீ அதிக சுறுசுறுப்பானவன் என்று மற்றவர்கள் கருதுகின்றார்களா?	ஆம்/இல்லை
28	நீ ஏதாவது முக்கியமான ஒரு காரியத்தை செய்துமுடித்த பின் அதனை விட நன்றாக செய்திருக்கலாமே என்ற எண்ணத்தோடு அடிக்கடி வருந்துகிறாயா?	ஆம்/இல்லை
29	மற்றவர்களோடு சேர்ந்து இருக்கும்போது நீ பெரும்பாலும் மவுனமாக இருக்கிறாயா?	ஆம்/இல்லை
30	நீ சில வேளைகளில் வீண் பேச்சுக்கு இடமளிக்கிறாயா?	ஆம்/இல்லை
31	நீ தாங்கக்கூடாத அளவிற்கு பல சிந்தனைகள் உன் தலையில் எழுவதுண்டா?	ஆம்/இல்லை
32	நீ எதையாவது தெரிந்து கொள்ள நினைக்கும்போது மற்றவர்களிடம் அதனைப் பேசுவதைக்காட்டிலும் புத்தகத்தையே புரட்டிப் பார்க்கிறாயா?	ஆம்/இல்லை
33	உனக்கு இதயப் படபடப்பு அல்லது இரத்த அழுத்தம் ஏற்படுவதுண்டா?	ஆம்/இல்லை
34	அதிக கவனம் செலுத்தும் வேலையை விரும்புகிறாயா?	ஆம்/இல்லை
35	உடல் நடுக்கம் உனக்கு ஏற்படுவதுண்டா?	ஆம்/இல்லை

36	உன்னை எந்நிலையிலும் கண்டுபிடிக்க இயலாத நிலையில் கூட சுங்க இலாகாவில் உன்னிடத்தில் இருப்பவை எல்லாவற்றையும் காட்டிவிட எண்ணுவாயா?	ஆம்/இல்லை
37	கேலிப் பேச்சுக்கள் பேசும் கூட்டத்தில் இருக்க உனக்கு வெறுப்பு ஏற்படுகின்றதா?	ஆம்/இல்லை
38	சீக்கிரத்தில் செய்யப்படும் வேலைகளில் ஈடுபட உனக்குப் பிரியமுண்டா?	ஆம்/இல்லை
39	நீ ஒரு கோபக்காரனா?	ஆம்/இல்லை
40	ஏற்படக்கூடிய பயங்கரமான சம்பவங்களைக் குறித்து நீ கவலை அடைகின்றாயா?	ஆம்/இல்லை
41	உன்னுடைய நடவடிக்கைகளில் நிதானமாகவும் படபடப்பு இல்லாமலும் நடந்து கொள்கிறாயா?	ஆம்/இல்லை
42	நீ உன் வேலைக்கு எப்போதாவது தாமதமாக சென்றிருக்கின்றாயா?	ஆம்/இல்லை
43	நீ பயங்கரமான சொப்பணங்கள் காண்பதுண்டா?	ஆம்/இல்லை
44	அந்நியரோடு பழகும் போது சந்தர்ப்பத்தை இழச்துபோகாமல் எல்லோரிடமும் பேச உனக்கு விருப்பமுண்டா?	ஆம்/இல்லை
45	வலி நோவுகளால் தொந்தரவுகள் அடைகின்றாயா?	ஆம்/இல்லை
46	அநேக சந்தர்ப்பங்களில் அதிகம் பேரை சந்திக்கமுடியாமல் போனால் உனக்கு வருத்தம் உண்டாகின்றதா?	ஆம்/இல்லை
47	உனக்கு அறிமுகமான எல்லோரிடத்திலும், நீ நிச்சயமாக விரும்பாத சிலர் இருக்கிறார்களா?	ஆம்/இல்லை
48	அநேக சந்தர்ப்பங்களில் அதிகம் பேரை சந்திக்க முடியாமல் போனால் உனக்கு வருத்தம் உண்டாகின்றதா?	ஆம்/இல்லை
49	உனக்கு அறிமுகம் ஆன எல்லோரிடத்திலும், நீ நிச்சயமாக விரும்பாத சிலர் இருக்கிறார்களா?	ஆம்/இல்லை
50	நீ எளிதில் உணர்ச்சிவசப்படுபவன் என்று உன்னை எண்ணுகிறாயா?	ஆம்/இல்லை
51	நீ ஒரு சமயநம்பிக்கை உடையவனாய் இருந்தாய் என்று உன்னால் கூற முடியுமா?	ஆம்/இல்லை
52	உன்னையும், உன் வேலையையும் குறித்துப் பிறர் குற்றம் கூறினால் நீ எளிதில் மனம் புண்படுகிறாயா?	ஆம்/இல்லை
53	மகிழ்ச்சிகரமான ஒரு விருந்தில் நீ சந்தோசமாக இருக்கக் கஷ்டம்	ஆம்/இல்லை

ஏற்படுகிறதா?

54 தாழ்வு மனப்பான்மையால் நீ தொந்தரவடைகிறாயா? ஆம்/இல்லை

55 உற்சாகமற்ற குழுக்களில் உன்னால் உற்சாகம் உண்டாக்க முடியுமா? ஆம்/இல்லை

56 நீ ஒன்றும் அறியாத காரியங்கள் குறித்துப் பேசுவதுண்டா? ஆம்/இல்லை

57 நீ உன் உடல் நலம் குறித்துக் கவலைப்படுவதுண்டா? ஆம்/இல்லை

58 அடுத்தவர்களிடம் பரிசாக விளையாட்டுக்கள் செய்ய உனக்கு விருப்பமா? ஆம்/இல்லை

59 தூக்கமின்மையால் அவதிப்படுகிறாயா? ஆம்/இல்லை

APPENDIX - VII

Hospital Anxiety & Depression Scale (HADS)

1. I feel tense or wound up

Most of the time	3
A lot of the time	2
From time to time	1
Not at all	0

2. I still enjoy the things I used to enjoy

Definitely as much	0
Not quite so much	1
Only a little	2
Hardly at all	3

3. I get a sort of frightended feeling as if something awful is about to happen

Very definitely and quite badly	3
Yes, but not too badly	2
A little but it doesn't worry me	1

	Not at all	0
4.	I can laugh and see funny side of things	
	As much as I always could	0
	Not quite as much now	1
	Definitely not so much now	2
	Not at all	3
5.	Worrying thoughts go through my mind	
	A great deal of the time	3
	A lot of the time	2
	From time to time but not too often	1
	Only occasionally	0
6.	I feel cheerful	
	Not at all	3
	Not often	2
	Sometimes	1
	Most of the time	0
7.	I can sit at ease and feel relaxed	

	Definitely	0
	Usually	1
	Not often	2
	Not at all	3
8.	I feel as if I am slowed down	
	Nearly all the time	3
	Very often	2
	Sometimes	1
	Not at all	0
9.	I get a sort of frightened feeling like butterflies in the stomach	
	Not at all	0
	Occasionally	1
	Quite often	2
	Very often	3
10.	I have lost interest in my appearance	
	Definitely	3
	I don't take as much as I should	2

I don't take quite as much care 1

I take just as much care as ever 0

11. I feel restless as if I have to be on the move

Very much indeed 3

Quite a lot 2

Not very much 1

Not at all 0

12. I look forward with enjoyment to things

As much as I ever did 0

Rather less than I used to 1

Definitely less than I used to 2

Hardly at all 3

13. I get sudden feelings of panic

Very often indeed 3

Quite often 2

Not very often 1

Not at all 0

14. I can enjoy a good book or radio or TV programme

Often	0
Not often	1
Sometimes	2
Very seldom	3