

**COMPARATIVE STUDY OF PSYCHIATRIC MORBIDITY
AMONG HIV POSITIVE PATIENTS AND LEPROSY
PATIENTS**

Dissertation submitted to the
TAMIL NADU DR. M. G. R. MEDICAL UNIVERSITY
in part fulfillment of the requirements for

M. D (PSYCHIATRY)

BRANCH XVIII



MARCH 2008

MADRAS MEDICAL COLLEGE

CERTIFICATE

This is to certify that the dissertation titled, “**COMPARATIVE STUDY OF PSYCHIATRIC MORBIDITY AMONG HIV POSITIVE PATIENTS AND LEPROSY PATIENTS**”, submitted by **Dr. V. Venkatesh Mathan Kumar**, in partial fulfillment for the award of the **MD degree in Psychiatry** by the Tamil Nadu Dr. M. G. R. Medical University, Chennai, is a bonafide record of the work done by him in the Institute of Mental Health, Madras Medical College during the academic years 2005 – 2008

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ACKNOWLEDGEMENT

I thank Prof. **T. P. Kalaniti M. D.**, Dean, Madras Medical College for permitting me to conduct this study.

I thank Professor **Dr. R. Sathianathen, M.D., D.P.M., M.P.H.**, Director, Institute of Mental Health, Chennai for his encouragement, help and guidance.

I thank Professor **Dr. S. Nambi, M.D., D.P.M.**, Senior Consultant, Institute of Mental Health for his encouragement and valuable suggestions.

I thank Professor **Dr. N. Vijaya, M.D.**, Deputy Superintendent, Institute of Mental Health for her valuable guidance and help.

I thank Professor **Dr. M. Murugappan, M.D., D.P.M.**, former Director, Institute of Mental Health, for his encouragement and guidance.

I thank my Guide, **Dr. T. V. Asokan, M.D., D.P.M.**, Assistant Professor, Institute of Mental Health for his guidance and help.

I sincerely thank **Dr. Suresh Kumar, M.D., D.P.M.**, for his kind help, encouragement and guidance.

My special thanks to **Dr. Aruna Devi M.D., D.D.**, Assistant Professor, Department of Dermatology, MMC and GGH for her guidance and assistance.

I thank **Ms. Supriya Sahu I.A.S**, Project Director, Tamil Nadu AIDS Control Society for permitting me to conduct this study.

My sincere thanks are due to all the Professors and Assistant Professors of Institute of Mental Health for their encouragement and frequent inputs.

I finally acknowledge and thank all my colleagues and the participants of this study for their kind cooperation

CONTENTS

Serial No.	Title	Page No.
1	INTRODUCTION	1
2	REVIEW OF LITERATURE	5
3	AIM AND HYPOTHESIS	24
4	METHODOLOGY	25
5	RESULTS	32
6	DISCUSSION	56
7	LIMITATIONS	61
8	CONCLUSIONS	62
9	REFERENCES	
10	APPENDIX	
11	Institutional Ethical Committee Approval	

INTRODUCTION

AIDS has become a great and powerful symbol for a world threatened by its divisions. In a deep and remarkable way, the child with AIDS is the world's child, the man or woman dying of AIDS has become the world's image of our own mortality.

Jonathan Mann

Director Global programme on AIDS, WHO

Infection with Human Immunodeficiency Virus (HIV) and its end stage, Acquired Immunodeficiency Syndrome (AIDS) is the major public health challenge of our times, with over 25 million persons already dead and over 50 million living with HIV/AIDS, the majority of whom, without access to therapy.

AIDS was first recognized in the US in 1981 with reports of unexplained opportunistic infections, including *Pneumocystis jirovecii* (formerly *Pneumocystis carinii*), pneumonia and Kaposi's Sarcoma (KS) among homosexual men in New York and San Francisco (Cleghorn, Reitzfr, and Gallo; 2000).

The first case of HIV infection in India was diagnosed among commercial sex workers in Chennai, Tamil Nadu, 1986.

HIV / AIDS is a major public health problem all over the world. The overwhelming majority of HIV infected people, more than 90%, live in the developing world and most of them do not even know that they are infected.

This epidemic killed about 3 million people all over the world in the year 2004. Globally more than 40 million people are infected with HIV (Training Module on continuum of care for health care provider 2005 TNAIDS control society).

According to the HIV sentinel surveillance report 2005, an estimated 5.206 million people in India were infected with HIV. Out of the total HIV infection 38.4% were females; 57% lived in the rural areas. (HIV & AIDS epidemiological surveillance & estimation report for the year 2005)

Psychiatric disorders, including mood disorders, anxiety disorders, substance use disorders, cognitive disorders, personality disorders, psychotic disorders and delirium are highly prevalent among patients infected with HIV. Psychopathology may have impact on treatment adherence, quality of life, social and adaptive functioning and possibly HIV – illness progression (Robinson and Quaqish 2002). During the course of illness, upto 85% of HIV – seropositive individuals report some depressive symptoms and upto 50% experience major depressive disorder. In a metaanalysis of published studies, Ciesla and Robert (2001) found that people with HIV were almost twice as likely as those who are HIV – Seronegative to be diagnosed with major depressive disorder and that depression was equally prevalent in people with both symptomatic and asymptomatic HIV. Life time prevalence rates of anxiety disorders are higher in the HIV clinical population as a whole than in the general population (Blalock et al 2005). Initial symptoms of HIV infection are neuropsychological in 10% to 30% of cases (Lezak – 1995).

LEPROSY

The first description of Leprosy came from India about 600 BC. The disease was called Kushta and was described as being different from vitiligo.

The origin of leprosy is, however, still a mystery, and some recent evaluations pointed out that *Mycobacterium leprae*, the etiological microorganism, is a degenerative mycobacterium that came in contact with humans when the first farmer settled in the Middle East, Europe and Asia thousands of years ago (Young, D.Robertson, et al, 2001).

Leprosy is also known as Hansen's disease, after demonstration of *Mycobacterium leprae* by Gerhard Armauer Hansen in 1873(Hansen,Galooft,1895).

The lesions of leprosy predominantly affect the skin, nasal mucosa and peripheral and superficial nerves. This is because *Mycobacterium leprae* grows best in cooler tissues.

Estimates of the total number of cases of leprosy worldwide vary from 8 million – 10 million. Most of the cases are in South East Asia, especially in India (10 cases per 1000 inhabitants) and in sub-Saharan Africa, where the disease reaches high endemic level (>40 cases per 1000 inhabitants). Leprosy affects males more frequently than females in a ratio of 2:1. Socioeconomic factors play an important role in leprosy around the world and account for the failure of imported cases to produce Secondary cases in Europe and United States.

Although Leprosy is a chronic infectious disease, it may be considered an immunological disease to a great extent, partially explaining the differing clinical pattern. Two different classifications are used - the Madrid classification (International congress of leprosy, 1966), accurate for clinical evaluation of leprosy patients, and the Ridley – Jopling classification useful for immunological classification. According to the Madrid classification, leprosy can be subdivided into 4 different types; Lepromatous, Tuberculoid, Borderline and Indeterminate forms.

For the treatment of a large population, patients may be divided into Paucibacillary cases (Tuberculoid and Indeterminate leprosy) and Multibacillary (Lepromatous and Borderline leprosy).

The clinical manifestations of leprosy vary from hypopigmented macules to widespread damage to peripheral nerves, skin, eyes and bones leading to deformity and disability.

Leprosy is still a major public health problem in India, even though the prevalence rates have come down from 57.6 cases per 10,000 population (1981) to 2.7 cases per 10,000 population (September 2003) (Dhilion et al). Reduction in prevalence rate alone, however, is not sufficient because, the social consequence of the disease on the life of patients is often severe and persists even after its cure (Santosh K. Chaturvede et al).

REVIEW OF LITERATURE

INTRODUCTION

Acquired Immunodeficiency Syndrome was demonstrated to result from infection with a virus belonging to the family of Retroviruses. It is highly neurotrophic and lymphotropic.

MODE OF TRANSMISSION

HIV is present in blood, semen, cervical and vaginal secretions and to a lesser extent in saliva, tears, breast milk and the cerebrospinal fluid of those who are infected (Sadock and Sadock, 2003). The modes of transmission include heterosexual and homosexual contact, vertical transmission, and instrumental transmission, which involves introduction of HIV – contaminated fluids or materials into the body by means of needles, blood products or various medical accidents. Receptive fellatio involving ejaculation of HIV – infected semen is another potential mode, but the actual risk is not known. Kissing is not considered a risk unless there is extensive oral disease with open sores. Worldwide, the sexual mode of transmission is the most important (Sadock & Sadock, 2000).

The chance of becoming infected after a single exposure is relatively low : 0.8 to 3.2% in unprotected receptive anal intercourse, 0.05 to 0.15% with unprotected vaginal sex, 0.32% after puncture with an HIV – contaminated needle and 0.67% after using a contaminated needle to inject drugs.

PSYCHIATRIC ASPECTS OF HIV INFECTION AND AIDS

Neuropsychiatric phenomena occurring during the course of HIV infection and AIDS can broadly be considered under neurobiological, psychobiological and psychosocial aspects. These phenomena can be the result of direct infection of the central nervous system with HIV, opportunistic infections that occur in the central nervous system, individual psychological reactions to HIV disease and its consequences, the social implications of the disease and side effects of medications taken to manage the disease. Thus, the broad range of mental health problems associated with HIV infection includes not only understandable emotional reactions to the illness, but also frank psychiatric disorders and neuropsychiatric syndromes.

Research has been carried out on the psychological status of people with HIV infection, including those at different stages of the illness, such as at the time of HIV testing, during asymptomatic and symptomatic stages of the illness. Notification of a positive test result is usually associated with severe, if transient, distress. Common diagnosis given to asymptomatic individuals referred to mental health services are adjustment disorder, major depression and other forms of depression, substance misuse, panic disorder and personality problems. A large number of symptomatic HIV patients present with depression (Perry and Tross, 1984; Dilley et al, 1985), while other common diagnosis in this group includes organic brain syndromes.

A number of studies have assessed the prevalence of psychiatric disorders in HIV positive patients (Seth 1991; Faulstich 1987; Maj 1994). King et al (1989) reported that 31% of a sample of 192 outpatients with HIV

infection and AIDS had significant psychiatric problems. In a study done by Lykestos et al (1994) on HIV positive patients attending a medical outpatient clinic, 54% had a psychiatric disorder, with an additional 22% diagnosed with substance use disorder. Lluich et al, on evaluating psychopathology in an inpatient sample of 25 AIDS patients, found that 80% had a psychiatric diagnosis, of which, the greatest number showed depressive symptoms. A study done in Spain by Ayuso et al (1996) on AIDS patients detected psychoactive substance use to be the principal diagnosis followed by adjustment disorder. As most available studies had been done on western populations, the WHO in 1994 implemented a cross-cultural venture called the WHO Neuropsychiatric AIDS study. The overall prevalence of current mental disorder was significantly higher in seropositive compared to seronegative patients in two of the five centers in the study. Probably one of the first reported studies on psychiatric morbidity in HIV infected individuals in India, by Jacob et al, documented an overall psychiatric morbidity of 26.1 %.

Some other studies done by Atkinson et al (1988) and Williams et al (1991) did not find a significant difference between HIV positive and negative controls with respect to prevalence of psychiatric morbidity.

Factors associated with the development of psychiatric disorders in HIV positive individuals have been studied:

- HIV related factors - mental health symptoms are more likely to occur at two stages; i.e., when the person is given a diagnosis of HIV infection and when physical symptoms develop or worsen (Davis et al 1995; Holt et al 1998).

- Personality factors - there is some evidence to show that people with personality disorders, in particular those with borderline or antisocial personality disorder are at a greater risk of acquiring HIV infection (Johnson et al 1996; Golding & Perkins 1996). It is suggested that people with personality disorders have less effective coping styles.
- Past psychiatric history (Dew et al, 1990; Catalan et al, 1992).
- Social support - individuals lacking in adequate social support usually report greater levels of psychological distress (Catalan et al, 1995; Katz et al 1996)
- Adverse life events - multiple bereavements, loss of supports, survivor's guilt and concerns about one's own health can conspire to make what is already a difficult situation, extremely hard to cope with, leading to unresolved and complex grief reactions (Sherr et al, 1995; Fishman and Perry, 1989).
- Sociodemographic characteristics - Older individuals may be at a greater risk for cognitive impairment and dementia (Catalan et al, 1995). Injecting drug users have the poorest psychological status, often having experienced social and psychological difficulties prior to acquiring the infection (Gala et al, 1993).

PSYCHIATRIC DISORDERS AND HIV

A) ACUTE STRESS REACTIONS

Psychological reactions to the diagnosis of HIV infection resemble those commonly described in response to the diagnosis of cancer or other life threatening diseases. However, in view of the specific psychosocial dimensions relevant to HIV, subjects receiving the diagnosis are suddenly confronted not only with the likelihood of developing a disease with a very poor prognosis, but also with various other issues: revealing their homosexuality / drug abuse to family, friends and colleagues; dealing with the fear of partners, friends and public; avoiding transmitting the infection to others and protecting themselves from opportunistic infection (Christ et al, 1988; Miller 1988). For all the above reasons, it is not surprising that acute stress reactions have been reported in upto 90% of subjects with a recent diagnosis of HIV (WHO, 1988).

Acute stress reaction may occur in any phase of the infection, with various changes in the person's clinical state. However, it is most common immediately after the diagnosis. It has also been found to occur most frequently in subjects lacking a partner or living in a rural environment according to reports from Germany (Seidl & Goebel, 1987), and also to be more common in homosexuals. Apart from clinical features of confusion, bewilderment, derealization and sleep disturbances are noted initially following the diagnosis; other emotional and behavioural reactions may include anger, withdrawal, guilt, denial, fear, despair (Morin et al, 1984; Dilley et al 1985, Miller 1995). Management focuses primarily on preventive measures such as pretest and post test counseling.

B) ADJUSTMENT DISORDERS

This is characterized by a morbid (that is excessive in length and/or intensity) response to the diagnosis of HIV infection or AIDS, or more generally to the stress associated with the disease. The clinical features may be characterized by depression, anxiety or obsessions and compulsions, and the disorder may last many months (WHO, 1988). Adjustment disorder has been reported to be the most frequent diagnosis in patient's with ARC or AIDS referred for psychiatric consultation (Dilley et al, 1985; Tross et al, 1986; Rundell et al, 1988; Schaerf et al 1989).

The disorder can be conditioned by several factors: subject's coping strategies (Namir et al, 1987), subjects who have internalized social non acceptance of drug abuse or homosexuality leading to feelings of guilt and self depreciation (Hays & Lyles, 1986; Miller, 1988), previous history of psychiatric disorders (Holland & Tross, 1985), family estrangement (Miller 1988), over concern over the impact of the illness on loved ones, financial difficulties, and poor social support (Zich and Temoshok 1987).

Management involves behavioural and cognitive psychotherapy on an individual or group basis, involving partners or family members as patients judge appropriate (Miller, 1988). Pharmacological treatment of depressive or anxiety symptoms may be required.

C) MOOD DISORDERS

i) DEPRESSIVE SYNDROMES:

A depressive syndrome not fulfilling the ICD-10 or DSM- IV criteria for depressive episode may occur at any point in the course of HIV infection (WHO, 1988). Major depressive disorder has been reported in subjects with HIV infection but estimates concerning its prevalence have been quite divergent. In a study of admitted AIDS patients done by Perry and Tross (1984), 82.7% showed mood disturbance with 17.3% fulfilling criteria for major depressive disorder. In hospitalized patients, this rate may be higher and approach 40%. Rundell et al (1988) after reviewing records of 111 HIV positive subjects seen at a Medical Air Force Centre in Texas, found major depressive disorder in 3.6% of the sample. Schaerf et al (1989) found a prevalence of 7% in a sample of AIDS patients, which was comparatively less than the prevalence of depressive disorders in a sample of general hospital consultations. Similar low rates of current major depression in men with AIDS was reported by Rabkin et al 1997, who found overall rates of 5-10% with no significant difference between HIV negative men, HIV positive men without AIDS and men with AIDS defining conditions.

In spite of these studies, others have reported rates of current major depression in HIV populations elevated two folds above those in healthy community samples and usually in the range found with other chronic medical illnesses (Atkinson et al 1988, Perry) 1990, William et al, 1991. In view of these vastly differing results Jeffrey Ciesla (2001) conducted a meta-analysis of 10 studies conducted from 1988 to 1998, which compared the rates of current

major depression between HIV positive and HIV negative groups. Though most of these studies concluded that the infection was not associated with a higher rate of the disorder, the results of the meta-analysis showed that the frequency of major depressive disorder was nearly 2 times higher in HIV positive than HIV negative persons with no relation to sexual orientation or disease stage.

The relationship between depression and disease progression in HIV has also been studied. A 10 year multicentre AIDS Cohort study by Lykestos et al (1996), showed a dramatic sustained rise in depressive symptoms as AIDS develops, with prior depression, HIV disease related factors and psychiatric stressors contributing to this risk.

Major depressive disorder in HIV may be interpreted in several ways:

- It may result from psychosocial problems related to the illness.
- May be directly related to HIV infection of the brain, in particular the predilection of the Virus for limbic areas, believed to control emotional experience.
- Predisposing factors in a vulnerable subject.
- From chance association.
- May result from secondary effects of the infection i.e., opportunistic infections or neoplasms (Perry & Tross, 1984), or use of antineoplastic drugs (Volberding et al 1985).

It is important to emphasize that depressive symptoms may be difficult to differentiate from some manifestations of AIDS Related Complex (fatigue, anorexia, weight loss, decreased libido) or of dementia (decreased memory and concentration).

ii) MANIC SYNDROMES

A few cases of hypomania or mania in subjects with HIV infection have also been described. The possible interpretations are similar to those proposed for acute psychotic disorder, with mania occurring either in the context of cognitive impairment (Gabel et al 1986; Schmidt & Miller, 1988), or in the absence of cognitive impairment (Schmidt & Miller 1988; Buhrich et al, 1988).

D) ANXIETY DISORDERS

Symptoms of anxiety determined by self report checklist tend to be higher in medically asymptomatic HIV positive patients than HIV negative at-risk samples (Atkinson et al, 1989). But other studies have reported that anxiety disorders may be common in groups at high risk for HIV infection, irrespective of HIV status (Baer 1989; Perry 1990). Six month prevalence rates of generalized anxiety disorder in HIV positive men are in the ranges of 15-20 percent (Atkinson & Grant 1994). Rates of other anxiety disorders do not appear to be markedly elevated (William, 1991; Perry 1990). Simple phobias and hypoactive sexual desire disorder have been reported (Rundell & Brown 1990).

E) ACUTE PSYCHOTIC DISORDERS

- With evidence of cognitive impairment

Hallucinations (either visual or auditory) and delusions (either persecutory or grandiose) are not infrequent in patients with ARC or AIDS. They may occur in the context of cognitive impairment which may sometimes be subtle or fluctuating (Nurnberg et al, 1984; Rundell, 1990; Thomas & Szabadi, 1987) or they may be initially the only psychopathological manifestation.

- Without evidence of cognitive impairment

Patients with asymptomatic HIV infection, AIDS Related Complex or AIDS, who developed acute psychotic disorders without any evidence of cognitive impairment throughout the episode, have been reported (Thomas et al, 1985; Halevie-Goldman et al, 1987; Buhrich et al 1988). The interpretation for this has already been outlined under manic disorders. A specific vulnerability of dopaminergic systems in AIDS has been suggested by Holland et al (1985). The predilection of HIV for the limbic system has also been discussed in connection with a case of catatonia in a HIV positive subject in whom PET scan showed increased blood flow in the right temporal cortex and basal ganglia (Volkow et al, 1987).

Though there have been numerous case reports of psychosis in HIV infection and AIDS with estimated rates of 0.1 to 5% (Sewell et al, 1994; Harris et al 1991; Buhrich 1988), accurate estimates of incidence and prevalence as compared to the general population is completely unknown (Maj

1990). Treatment interventions studied in this group have found the response to neuroleptics to be favourable, but AIDS patients are highly susceptible to the extrapyramidal side effects of antipsychotic drugs.

F) HIV DEMENTIA

The HIV virus being highly neurotrophic, neuropsychological abnormalities are commonly present in HIV infected individuals. Clinically apparent central nervous system disease occurs in at least 20-40% of AIDS patients (Wolcott et al 1989).

HIV dementia is currently believed to be caused by the infection of the brain with HIV (Navia et al, 1986). The onset is usually insidious. Early symptoms can be subdivided into three groups: cognitive, behavioural and motor (Navia et al, 1986; Price et al 1988). Behavioural symptoms include apathy, reduced spontaneity and social withdrawal. Depression, irritability, emotional lability, agitation and psychotic symptoms can rarely occur. Estimates of the prevalence of HIV dementia varies according to the sample studied, the stage of illness and the criteria used for diagnosis. Janssen et al (1989) reported that of the adults in his study, 6.5% had HIV dementia, and 3.0% were reported to have it as the only early manifestation of AIDS. Previous estimates of the point prevalence of HIV dementia in AIDS patients ranged from 8-16% (WHO 1988).

As expected, the prevalence is found to be much higher in autopsy series of cases reported to neurologists, reaching the figure of 66% (Price et al, 1988). Neurological abnormalities have been reported in a substantial proportion of symptomatic HIV positive subjects, not showing the clinical picture of HIV dementia. Neurocognitive impairment in the asymptomatic phase of HIV infection remains controversial (Grant et al 1989).

G) DELIRIUM

Delirium has been described both in relation to HIV dementia (Price et al, 1988) and to the aseptic meningitis which may occur following infection. Its occurrence in AIDS patients may be related to hypoxia (from *Pneumocystis carinii* pneumonia) Cryptococcus meningitis, systemic infections, space occupying lesions of the brain (CNS lymphoma or brain abscesses due to toxoplasmosis), metabolic impairments and the use of psychotropic medications (especially tricyclic antidepressants, whose central anticholinergic activity seems to be more pronounced in such patients).

The syndrome usually develops over a short period of time (hours to days) with fluctuations in intensity over the course of a day. Complete recovery of delirium usually occurs at the time of seroconversion, but delirium superimposed on HIV dementia may aggravate its course (Price et al 1988).

Available estimates of the prevalence and incidence of HIV delirium in HIV infection are lacking.

H) SUBSTANCE USE DISORDERS

Groups at highest risk for HIV infection also commonly have substance use disorders and alcohol dependence (Atkinson et al, 1988; Baer 1989). Though many alcoholics have a chronic history of substance use, alcohol use disorders may occur in some individuals due to the stress of the disease and physical disability.

I) PERSONALITY DISORDERS

Perkins et al (1993) assessed personality disorders in a HIV positive population and found the prevalence to be fairly high. Patients with personality disorders may experience greater dysphoria and are more likely to cope with the threat of AIDS in a dysfunctional way.

J) OTHER AIDS RELATED PSYCHOPATHOLOGY

- Delusions - It is well known that psychotic patients tend to incorporate in their delusions, topics that are of public interest. Several authors have described delusions of having contracted AIDS in patients suffering from psychotic depression, schizoaffective disorder or paranoid schizophrenia (Rapaport & Braff, 1988; O'Brien, 1987; Shetty, 1988) with the most frequent occurrence in psychotic depression.
- Suicidal attempts by contracting AIDS (Francis et al Ins: Flavin et al 1986) – Highest risk in homosexual men who are depressed or alcoholic.
- Factitious AIDS (Miller et ~ 1986)

K) AIDS RELATED PSYCHOPATHOLOGY IN SUBJECTS WITHOUT HIV INFECTION

Hypochondriacal syndrome (the 'worried well') a syndrome marked by the persistent belief in the presence of HIV infection despite repeated negative serological tests and clinical examinations has been described by various authors (Forstein, 1984; Miller, 1988).

PSYCHIATRIC DISORDERS AND LEPROSY

The skin is the most visible organ and plays a significant role in determining one's self – image. An individual with chronic visible dermatological lesions may have psychological distress. It is estimated that psychological problems in those attending the dermatological outpatient is as high as 40% to 80% (Medansky and Handler).

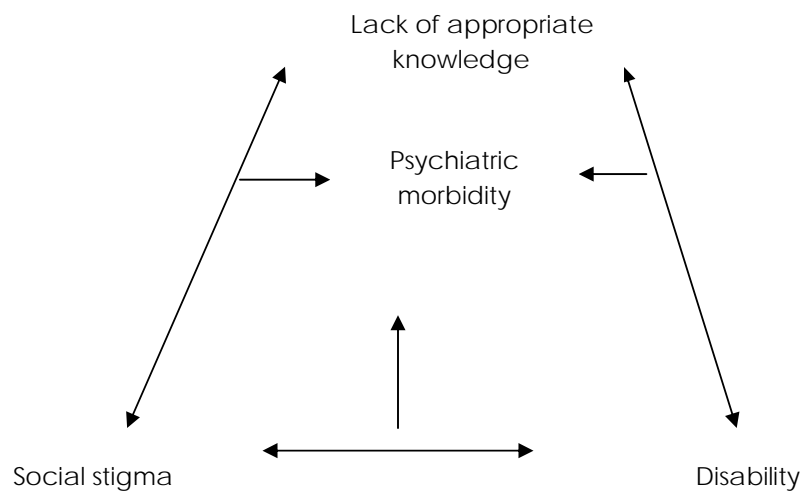
Among the dermatological conditions, leprosy occupies a unique place in that it is not only disfiguring but also disabling and is associated with a high level of stigma.

The available literature indicates that the prevalence of emotional disturbances in those suffering from leprosy is high (Campos et al 1980).

Studies done in India have also confirmed the high prevalence of psychiatric morbidity in persons affected by Leprosy. Epidemiological study done by Kumar and Verghese (1980) found the prevalence of psychiatric morbidity in leprosy population in the community to be 99 per 1000 in comparison to 63 per 1000 in the general population.

A study done by Bharath et al found a prevalence of psychiatric morbidity in a clinical population of patients with leprosy in South India to be 12.2%, less than that in the control group of psoriatic patients.

Three factors were found to correlate with psychiatric morbidity in a population of leprosy patients.



Studies done by Kumar and Verghese, 1980, Ramanathan et al 1984, Verma and Shivaguntam, 1984, found that physical deformity has been identified as an important correlate.

Bharath et al found that there is significant correlation between psychiatric morbidity and knowledge about the disease, social, emotional and health adjustment ($P < 0.01$). There was no correlation between psychiatric morbidity and duration of illness, perceived negative attitude of the family members, occupation and home adjustment.

When the condition is first diagnosed, the patient goes through sequences of reaction well described by Kuble – Ross and others – denial, anger, bargaining, depression and acceptance. [Henry R. Oliver 1987.]

ADJUSTMENT DISORDER

It is a common reaction in the initial stage. Some studies found that more than 50% of leprosy patients had adjustment problem initially. A study done by Mitchell G. Weiss et al using the explanatory model interview catalogue found a prevalence of adjustment disorder of 26.8% in leprosy patients.

DEPRESSION

The commonest psychiatric diagnosis is depression. Depression was positively correlated with physical disability and marital status, but not with age, sex, education, type of leprosy or duration of illness (Kisivuli et al).

Mitchell G. Weiss et al found a prevalence of major depression of 17.9% in an outpatient sample. Henry R Oliver found 46% prevalence of major depressive disorder in a hospital based sample. Statistically significant difference was found between non rehabilitated group (66.6%) and rehabilitated group (41.3%) in a study done by K.K Verma et al.

STIGMA

Stigma is a society's negative evaluation of particular features of behaviour. There is a great deal of variability in approaches to define stigma. Goffmann defined stigma as an "attribute that is deeply discrediting" that reduces the bearer "from a whole and usual person to a tainted, discounted one." Stafford and Scott defined stigma as "a characteristic of persons that is contrary to norm of a social unit", where a norm is defined as "shared belief that a person ought to behave in a certain way at a certain time." Social labeling and social stigma are interrelated. The culmination of stigma process occurs when designated differences lead to various forms of disapproval, rejection, exclusion and discrimination. Varied dimensions of stigmatized medical conditions include the nature of the illness, its history, and attributed characteristics; sources of creation and perpetuation of stigma; the nature of the population who are perceived to carry the illness; the kind of treatment and practitioners sought for the condition; and how individuals with stigmatized medical conditions cope with societal insults that endanger their personal identity, social life, and economic opportunities.

Stigma is inherently integrated in different aspects of Indian life, especially with certain diseases. Since time immemorial, tuberculosis, cancer, leprosy, and mental illnesses were stigmatizing, until HIV infection became prevalent over the last two decades (Santosh K. Chaturvedi et al).

HIV – related stigma is multi-layered, tending to build upon and reinforce negative connotations through the association of HIV and AIDS with already-marginalized behaviours, such as sex work, drug use, and homosexual

and transgender sexual practice. It also reinforces fears of outsiders and otherwise vulnerable groups, such as prisoners and migrants. Individuals living with HIV are often believed to deserve their HIV-positive status as a result of having done something 'wrong'.

Stigma is deeply rooted, operated within the values of everyday life. Although images associated with AIDS vary, they are patterned so as to ensure that AIDS-related stigma plays into, and reinforces, social inequalities.

Stigmatization can also occur on another level. People living with HIV may themselves internalize the negative responses and reaction of others – a process that can result in what some people have called self- or 'internalized' stigmatization. Self-stigmatization has links to what some writers have described as 'felt', as opposed to 'enacted', stigma, in that it primarily affects an individual's or affected community's sense of pride and worth. For people living with HIV, this may be manifested in feelings of shame, self-blame, and worthlessness, which, combined with feelings of being isolated from society, can lead to depression, self-imposed withdrawal and even suicidal feelings.

Leprosy is probably associated with maximum degree of deformity, disability, and social stigma. Because of medical advances, there has been a considerable reduction in the stigma in the last 50 years. It is only in the last few years, however, that the social dimension is being increasingly recognized as critical to the process of rehabilitation of these patients and being incorporated into the various leprosy control programs.

Since the early 1980s, there have been studies on leprosy patients emphasizing the presence of psychiatric morbidity. Patients had more negative

attitudes toward their illness, most commonly illness evokes public fear and hate, illness is degrading and humiliating, they should be segregated from society, and illness is incurable and is a consequence of sins. Segregation from family (by being inpatients) accentuated the negative attitudes and associated stigma. Subsequently, 100 displaced or migratory leprosy patients in a centre in North West India were studied for presence of psychiatric morbidity and its correlates. A very high prevalence rate was found (76%), depression and anxiety being the illnesses encountered. The authors attributed this high psychiatric morbidity to the fact that the migrated patients had been stigmatized and subjected to rejection. Presence of social support, however, contributed to lesser presence of psychiatric morbidity by offering social and emotional security. It has been additionally reported that patients with leprosy can be subject to two kinds of stigma: social stigma and self-stigma leading into socially imposed isolation and self-imposed isolation.

AIM AND HYPOTHESIS

AIM OF THE STUDY

To compare the psychiatric morbidity between HIV positive patients and leprosy patients

OBJECTIVES

- 1) To assess the prevalence of psychiatric morbidity among HIV positive and leprosy patients
- 2) To study the stigma related to HIV

HYPOTHESIS

The following null hypothesis was postulated

There is no difference in psychiatric morbidity, physical distress and self perceived stigma between HIV positive patients and Leprosy patients.

MATERIAL AND METHOD

SETTING

The sample was drawn from outpatients attending the Anti Retroviral Therapy Clinic (ARV Clinic) and Leprosy Clinic of the Chennai Government Medical College, Chennai.

Patients attending these clinics are referred from various departments within the hospital, other centres and the nearby towns. The psychosocial unit of the ARV clinic is involved in providing information and education about HIV and AIDS for patients. Pretest counseling and posttest counseling are offered for the individuals attending the clinic.

DESIGN

Case Control Study design.

RECRUITMENT

Thirty one (31) HIV positive and thirty (30) leprosy patients, attending the ART clinic and Leprosy clinic respectively, who satisfied the inclusion criteria for the study were selected.

HIV infection was diagnosed by ELISA as per WHO guidelines. Leprosy infection was diagnosed by clinical examination as well as skin biopsy test.

Inclusion criteria for cases

- 1) Age between 18 and 60 yrs
- 2) Definitive diagnosis of HIV infection
- 3) Informed Consent

Inclusion criteria for controls

- 1) Age between 18 and 60 yrs
- 2) Definitive diagnosis of Leprosy
- 3) Informed Consent

Exclusion criteria for cases

- 1) Patients with mental and physical illness of such severity so as to preclude the interview
- 2) Those patients who were unwilling or could not understand the information required to give consent to the study.

Exclusion criteria for controls

- 1) Patients with mental and physical illness of such severity so as to preclude the interview
- 2) Those patients who were unwilling or could not understand the information required to give consent to the study.

Data Collection

The following instruments were employed to collect the data

1. A semi – structured proforma to collect the socio demographic details and psychiatric history (appendix – 1)
2. ICD – 10 Clinical and Diagnostic Criteria
3. Hamilton Rating Scale for Anxiety (HAM A) (Appendix – 2)
4. Beck Depression Inventory (BDI) (Appendix – 3)
5. Beck scale for suicidal ideation (BSS) (Appendix – 4)
6. Montgomery Asberg Depression Rating scale (MADRS) (Appendix – 5)

1. Semi structured Proforma

Information was collected regarding the following

- a. Sociodemographic data – includes hospital number, age, sex, marital status, religion, occupation, education, socioeconomic status, social support, time interval between HIV diagnosis and assessment, time interval between leprosy diagnosis and assessment.
- b. Clinical characteristics - information regarding current psychiatric diagnosis, past psychiatric history, family history and suicidality were entered.
- c. Physical Distress – relating to impairment due to physical alignment or illness.

- d. Self – Perceived Stigma – a 3 item Likert scale was constructed to assess the individual perception of the stigmatizing nature of the HIV and leprosy infection.
- e. The proforma contained the same items for both cases and controls, except that the one for cases included CD4+ cell count, VDRL test status and HIV status of spouse.

2. ICD – 10 Clinical and diagnostic criteria.

This was used to diagnose current and past psychiatric morbidity.

3. Hamilton Rating scale for Anxiety (HAM – A)

This 14-item scale is the most widely used scale for anxiety. Scores on individual items range from 0-4, with a total score of 56, with a final item which rates behaviours at interview.

4. Beck Depression Inventory (BDI)

This 21-item self rating scale is a well established, widely used inventory of the cognitive, affective, motivational and somatic symptoms of depression. Scores on individual items range from 0-3 with a total score of 63

0 - 9 minimal

10- 16 mild depression

17- 29 moderate depression

≥ 30 severe depression

5. Beck Scale for Suicide Ideation (BSS)

This is a 21 item scale with scores ranging from 0-2 on individual items (items 20 and 21 are not included in the total score). Thus the possible range of score is 0-38. The scale for suicidal ideation was designed to quantify the intensity of current conscious suicidal intent by measuring self destructive thoughts or wishes. The scale is divided into 5 sections

- a. Characteristics of attitude towards living/dying
- b. Characteristic of suicidal ideation/ wish
- c. Characteristic of contemplated attempt
- d. Actualization of attempt contemplated
- e. Background factors

6. Montgomery – Asberg Depression Rating scale (MADRS)

The MADRS, developed by S.A Montgomery and M. Asberg, is a rating scale for the assessment of depression which was drawn from the comprehensive psychopathological rating scale.

The MADRS consists of 10 items that are all core symptoms of depression. Nine of the items are based upon patient report and one on the rater's observation. Items of the scale are rated on a 0-6 scale.

Unlike the more commonly utilized HAM-D, MADRS does not focus predominantly on the somatic symptoms of depression, but rather focuses on symptoms such as sadness, tension, lassitude, pessimistic thoughts and suicidal thoughts.

Procedure

The study was conducted over a period of 3 months. Informed consent was obtained from each subject prior to interview and subjects assured of confidentiality.

The project was discussed and approved by the Ethical Committee of the Madras Medical College.

31 HIV positive patients receiving ambulatory care at ART Clinic of the Government General Hospital, Chennai and 30 leprosy patients receiving ambulatory care at Leprosy Clinic of the Government General Hospital, Chennai were selected who fulfilled the inclusion criteria of the study. Information for the study was obtained from the patients and hospital records.

Each patient underwent a semi-structured clinical interview and psychiatric morbidity, if present, was diagnosed based on ICD – 10 Clinical and Diagnostic Criteria. Information obtained from each patient was then entered into semi structured proforma. Current Anxiety was measured by Hamilton Rating Scale for Anxiety. Depression was measured by Beck Depression Inventory and Montgomery Asberg Depression Rating Scale. Beck Scale for Suicidal Ideation measured suicidal ideation during the week preceding the interview.

STATISTICAL ANALYSIS

First using Epi 6 info (WHO and CDC, Atlanta) software frequency distribution of all variables that were collected during the study was obtained. The two groups of cases and controls were compared for and univariate analysis was carried out using SPSS version 15 (SPSS Inc.,). Chi square test was used for the qualitative variables and Anova was performed for quantitative variables. The test of significance was fixed at $p < 0.05$.

RESULTS

Table 1

Socio-demographic characteristics of cases (N = 31)

Variables	N	Percentage (%)	95 % Confidence Interval (C. I)
Sex			
Male	25	80.6	62.5, 92.5
Female	6	19.4	7.5, 37.5
Education			
Primary	6	19.4	7.5,37.5
Secondary	22	71.0	52,85.5
Higher secondary	1	32.0	0.1,16.7
College	2	6.5	0.8,21.4
Occupation			
Employed	27	87.1	70.2, 96.4
Unemployed	4	12.9	3.6, 29.2
Economic			
Low	18	58.1	39.1, 75.5
Middle	11	35.5	19.2, 54.6
High	2	6.5	0.8, 21.4

Variables	N	%	95 % C.I.
Region			
Urban	15	48.4	30.2, 66.9
Rural	16	51.6	33.1, 69.8
Marital Status			
Married	13	41.9	24.5, 60.9
Unmarried	11	35.5	19.2, 54.6
Divorced	1	3.2	0.1, 16.7
Widow	3	9.7	2.0, 25.5
Separated	3	9.7	2.0, 25.8
Social Support			
Poor	11	35.5	19.2, 54.6
Moderate	16	51.6	33.1, 69.8
Good	4	12.9	3.6, 29.8
	N	Mean	Standard Deviation
Age	31	33.74	6.54

The average age of the cases was 33.7 (S.D. 6.5), most were males (80%), majority of them had attained secondary level of education and predominantly belonged to low and middle economic status.

Table 2**Sociodemographic characteristics of Controls (n = 30)**

Variables	N	Percentage (%)	95 % Confidence Interval (C. I)
Sex			
Male	24	80	61.4, 92.3
Female	6	20	7.7, 38.6
Education			
Primary	12	40	22.7, 59.4
Secondary	13	43.3	22.5, 62.6
Higher secondary	2	6.7	0.8, 22.1
College	3	10	2.1, 26.5
Occupation			
Employed	23	76.1	57.7, 90
Unemployed	7	23.3	9.9, 42.2
Economic			
Low	20	66.7	47.2, 82.7
Middle	10	33.3	17.3, 52.8
High	0	0	0.0, 11.6

Variables	N	Percentage (%)	95 % Confidence Interval (C. I)
Region			
Urban	17	56.7	37.4, 74.5
Rural	13	43.3	25.5, 62.6
Marital Status			
Married	16	53.3	34.3, 71.7
Unmarried	11	36.7	19.9, 56.1
Divorced	0	0	0, 11.6
Widow	3	10	2.1, 26.5
Separated	0	0	0, 11.6
Social Support			
Poor	9	30	14.7, 49.4
Moderate	14	46.7	28.3, 65.7
Good	7	23.3	9.9, 42.3
	N	Mean	Standard Deviation
Age	30	39.53	13.08

The average age of the controls was 39.5 (S.D. 13.1), most were males (80%), majority of them had attained secondary level of education and predominantly belonged to low and middle economic status.

Table 3
Psychiatric features in Cases (n = 31)

Variable	N	%
Current psychiatric diagnosis		
No diagnosis	16	51.6
Depressive Episode	5	16.2
Adjustment Disorder	3	9.7
Alcohol Dependence	4	12.9
Mixed Anxiety and Depression	2	6.5
Past psychiatric morbidity		
Absent	23	74.2
Present	8	25.8
Family h/o psychiatric illness		
Absent	23	74.2
Present	8	25.8

Current psychiatric diagnosis was present in 48.4 % of the sample. Depression and Alcohol dependence were the two most common diagnoses. Past psychiatric morbidity and family history of psychiatric morbidity were present in about 25 % of the sample each.

Table 4
Psychiatric features in Controls (n = 30)

Variable	N	%
Current psychiatric diagnosis		
No diagnosis	15	50
Depressive Episode	4	13.3
Dysthymia	2	6.6
Alcohol Dependence	3	10
Generalized Anxiety Disorder	1	3.3
Mixed Anxiety and Depression	1	3.3
Adjustment Disorder	4	13.3
Past psychiatric morbidity		
Absent	26	86.7
Present	4	13.3
Family h/o psychiatric illness		
Absent	28	93.3
Present	2	6.7

Diagnosable psychiatric disorder was made out in 50 % of the controls, with Depression, Adjustment disorder and Alcohol dependence being most common.

Table 5
Physical Distress of Cases (n = 31)

Physical Distress	N	%	95 % C.I.
Absent	27	87.1	70.2, 96.4
Present	4	12.9	3.6, 29.8

Around 13 % of the cases exhibited physical distress, as measured by pain and disability.

Table 6
Physical Distress of Controls (n = 30)

Physical Distress	N	%	95 % C.I.
Absent	10	33.3	17.3, 52.8
Present	20	66.7	47.2, 82.7

Around 67 % of the controls exhibited physical distress, as measured by pain, disability and disfigurement.

Table 7
Perception of Stigma in Cases (n = 31)

Perception	N	%
Agree	28	90.32
Don't know	2	6.45
Disagree	1	3.23

Around 90 % of the cases accepted to a perception of stigma.

Table 8
Perception of Stigma in Controls (n = 30)

Perception	N	%
Agree	19	63.34
Don't know	9	30
Disagree	2	6.66

Around 63 % of the controls accepted to a perception of stigma.

Table 9
Scores on scales for cases (n = 31)

Scale	Mean score	Standard Deviation
BDI	5.0645	9.0146
MADRS	4.3871	9.0799
BSS	2.032	5.5707
HAM A	3.5161	6.4491

The mean score on BDI was 5.06 (S.D. 9.04). The mean score of MADRS was 4.38 (S.D. 9.07). The mean score on BSS was 2.03 (S.D. 5.57). The mean score on HAM A was 3.51 (S.D. 6.44).

Table 10
Scores on scales for controls (n = 30)

Scale	Mean score	Standard Deviation
BDI	5.1667	5.1063
MADRS	3.800	4.082
BSS	0.700	1.7840
HAM A	4.200	4.6786

The mean score on BDI was 5.16 (S.D. 5.1). The mean score of MADRS was 3.80 (S.D. 4.08). The mean score on BSS was 0.07 (S.D. 1.78). The mean score on HAM A was 4.2 (S.D. 4.67).

COMPARATIVE DATA

The groups were compared for the following variables:

1. Sociodemographic variables
2. Psychiatric characteristics
3. Physical Distress
4. Perception of stigma
5. Scores on BDI, MADRS, BSS, HAM A

Table 11

Comparison of Sex distribution of cases and controls

	Sex		Total
	Female	Male	
Cases	6	25	31
Controls	6	24	30
Total	12	49	61

	Value	df	p value
Pearson Chi-Square	0.004	1	0.949

Table 12
Comparison of Educational status of cases and controls

	Educational Status				Total
	Primary	Secondary	Higher Secondary	College	
Cases	6	22	1	2	31
Controls	12	13	2	3	30
Total	18	35	3	5	61

	Value	df	p value
Pearson Chi-Square	4.833	3	0.184

Table 13
Comparison of Occupational status of cases and controls

	Occupational Status		Total
	Unemployed	Employed	
Cases	4	27	31
Controls	7	23	30
Total	11	50	61

	Value	df	p value
Pearson Chi-Square	1.122	1	0.289

Table 14
Comparison of Economic status of cases and controls

	Economic Status			Total
	Low	Middle	High	
Cases	18	11	2	31
Controls	20	10	0	30
Total	38	21	2	61

	Value	df	p value
Pearson Chi-Square	2.137	2	0.344

Table 15
Comparison of regional background of cases and controls

	Region		Total
	Urban	Rural	
Cases	15	16	31
Controls	17	13	30
Total	32	29	61

	Value	df	p value
Pearson Chi-Square	0.419	1	0.517

Table 16
Comparison of Marital status of cases and controls

	Marital Status					Total
	Married	Unmarried	Divorced	Widow	Separated	
Cases	13	11	1	3	3	31
Controls	16	11	0	3	0	30
Total	29	22	1	6	3	61

	Value	df	p value
Pearson Chi-Square	4.295	4	0.368

Table 17**Comparison of Social support of cases and controls**

	Social support			Total
	Poor	Moderate	Good	
Cases	11	16	4	31
Controls	9	14	7	30
Total	20	30	11	61

	Value	df	p value
Pearson Chi-Square	1.135	2	0.567

Table 18
Comparison of Age distribution of cases and controls

	Sum of squares	df	Mean square	F	Sig.
Between groups	7.796	28	0.278	1.196	0.311
Within groups	7.45	32	0.233		
Total	15.25	60			

Tables 11 to 18 show the comparison of Sociodemographic tables between the cases and controls. There is no statistically significant difference in Sociodemographic variables between cases and controls.

Table 19
Comparison of Current Psychiatric diagnosis of cases and controls

	Current Psychiatric Diagnosis		Total
	Absent	Present	
Cases	16	15	31
Controls	15	15	30
Total	31	30	61

	Value	df	p value
Pearson Chi-Square	0.016	1	0.90

There is no statistically significant difference in current psychiatric diagnosis between cases and controls.

Table 20
Comparison of Past Psychiatric morbidity of cases and controls

	Past Psychiatric morbidity		Total
	Absent	Present	
Cases	23	8	31
Controls	26	4	30
Total	49	12	61

	Value	df	p value
Pearson Chi-Square	1.501	1	0.221

There is no statistically significant difference in past psychiatric morbidity between cases and controls.

Table 21
Comparison of Family history of psychiatric morbidity
of cases and controls

	Family history of psychiatric morbidity		Total
	Absent	Present	
Cases	23	8	31
Controls	28	2	30
Total	51	10	61

	Value	df	p value
Pearson Chi-Square	4.075	1	<i>0.044</i>

The difference in family history of psychiatric morbidity between cases and controls is statistically significant ($p < 0.05$).

Table 22
Comparison of Physical Distress of cases and controls

	Physical Distress		Total
	Absent	Present	
Cases	27	4	31
Controls	10	20	30
Total	37	24	61

	Value	df	p value
Pearson Chi-Square	18.466	1	0.00

There is a statistically significant difference in the presence of physical distress between cases and controls. Among controls, 20 (66.7%) had physical distress as compared to 4 (12.9%) among the cases. This could possibly be because of the effect leprosy has on the peripheral nerves.

Table 23
Comparison of Perception of Stigma of cases and controls

	Perception of Stigma		
	Strongly agree/ Agree	Others	Total
Cases	28	3	31
Controls	19	11	30
Total	21	26	61

	Value	df	p value
Pearson Chi-Square	6.18	1	<i>0.0123</i>

The two groups differed in the perception of stigma and the difference was statistically significant ($p = 0.01$). Most of the HIV positive patients (90.3%) agreed that they perceived stigma compared with 63.3% of leprosy patients.

Table 24
Comparison of scores on BDI

	Sum of squares	Df	Mean Square	F	Sig.
BDI	6.525	18	0.363	1.746	0.069

There is no statistically significant difference between cases and controls in scores on BDI.

Table 25
Comparison of scores on MADRS

	Sum of squares	Df	Mean Square	F	Sig.
MADRS	7.704	16	0.482	2.809	<i>0.003</i>

There is a statistically significant difference in scores on MADRS between cases and controls.

Table 26
Comparison of scores on BSS

	Sum of squares	Df	Mean Square	F	Sig.
SSI	2.079	7	0.297	1.196	0.321

There is no statistically significant difference between cases and controls in scores on BSS.

Table 27
Comparison of scores on HAM A

	Sum of squares	Df	Mean Square	F	Sig.
HAM A	4.413	15	0.294	1.222	0.291

There is no statistically significant difference between cases and controls in scores on HAM A.

DISCUSSION

The study was done using a case-control design. The cases comprised of HIV positive patients attending outpatient clinic of the general hospital, Chennai. The control group of patients was patients suffering from Hansen's disease attending the outpatient clinic of the same tertiary hospital. The controls were selected from patients suffering from Leprosy as these two diseases that are being examined are the ones subjected to stigma, marginalization and ostracization from communities.

SOCIODEMOGRAPHIC FEATURES

Most studies done on HIV/AIDS patients have focused on specific group e.g. homosexual men (Kelly et al, 1998), female military personnel (Rabkin et al, 1992) and AIDS patients (Rabkin et al, 1997). Most studies done on leprosy patients have focused on those residing in rehabilitation centres (K.K. Verma et al, 1994) and Leprosy hospitals (Henry Oliver M.D. 1987). This study was done on patients attending the outpatient department. The mean age of HIV group was 33.7 years, indicative of the prevalence of infection among the younger age group. The study group had a low percentage of females; this could be due to the reluctance among the female HIV patients in giving informed consent for the study. The majority were from low socioeconomic group. This could be due to the fact that majority of the patients attending the general hospital services hail from the low socio economic group.

CLINICAL FEATURES

The prevalence of psychiatric morbidity was 48.4% among the cases (HIV patients) and 50 % among the controls. The prevalence of psychiatric morbidity in the study group is similar to the findings from the study done by Priya Mary Mammen in CMC, Vellore (2002) and is similar to the study by Lyketsos et al, 1994 which found a psychiatric morbidity of 54% among HIV positive patients attending the outpatient clinic.

The prevalence of psychiatric morbidity among the leprosy patients is similar to the result found by Mitchell Gweiss et al, 1992(50 %).

Among those HIV patients with psychiatric morbidity, the most common diagnosis was depression. The rate of depressive disorder detected in the present study is 16.2 %. This is similar to the finding of Perry and Tross (1984) who found a prevalence rate of major depression of 17.3 % in their sample, although their sample consisted of admitted AIDS patients. This is also similar to the finding by Priya Mary Mammen who found a prevalence rate of major depression of 14.5% in their sample of outpatients.

The rate of Alcohol Dependence found in this study was 12.9 % which is midway to the prevalence rates found in other studies. For example, Lyketsos et al 1994 found a prevalence of 22% while the prevalence in the study by Priya Mary Mammen was 6 %. The prevalence of adjustment disorder in our study was 9.7 %.

The leprosy patients group had a prevalence of depression of 16.6 % while that of Dysthymia was 6.6 %. This finding correlates with the study by Mitchell Gweiss et al, 1992, which showed a prevalence of major depression of 17.9 % and 3.6 % of Dysthymia among patients with leprosy.

The two groups of patients – HIV positive and the leprosy patients were comparable for all the socio-economic characteristics. A comparison was made between the two groups for all the relevant variables – psychiatric history, physical distress and perception of stigma. The two groups did not differ with regards to the prevalence of psychiatric morbidity as observed through clinical examination. The family history of psychiatric illness was more among the HIV positive patients compared with the leprosy patients. There was difference in the mean total scores obtained from MADRS and this difference means that the HIV positive patients exhibit more depressive symptoms compared with the leprosy patients. The two groups differed significantly in their perception of stigma. As most HIV positive patients express overt stigma, this needs to be addressed. This perception of stigma as well explains the more depressive symptomatology (not amounting to clinical syndrome) observed among the HIV positive patients.

This study and its implications are important for the following two reasons. First, it is worth investigating the psychiatric morbidity of the HIV positive patients. Depression is the most important psychiatric morbidity followed by alcohol dependence. While organizing mental health services for the HIV positive patients this factor should be considered. Depression is

eminently identifiable and more importantly treatable. Early identification and treatment of depression would certainly improve the quality of life of HIV positive individuals. Furthermore, depression among HIV positive individuals interferes with adherence to HIV treatment. Treating depression adequately is a sure way to improve adherence with treatment. Alcohol use among the HIV positive patients is detrimental to their health. Alcohol facilitates HIV diseases progression. Further, dependent individuals lead a chaotic life style that will interfere with their compliance to treatment. Alcohol use should be routinely screened and those with alcohol use disorders should be identified and helped at the earliest.

Second, the study has demonstrated that the HIV positive patients suffer from stigma even more than patients with leprosy. If in yesteryears leprosy was the most stigmatized condition, at the present times, unfortunately, stigma seems to be the greatest threat for individuals with HIV infection. Despite the fact that HIV disease is a chronic manageable condition for which evidence based effective medications are available (free treatment through Government hospitals), still stigma surrounds this condition markedly. Addressing and defeating the stigma is vital. Tackling HIV-related stigma, discrimination and human rights violations is critical in slowing the impact of the epidemic. Stigma and discrimination impact negatively on every aspect of the prevention-care-treatment continuum, as well as greatly increasing the suffering associated with living with HIV. Stigma, discrimination and human rights violations are intimately linked, reinforcing and legitimizing each other. Multifaceted action,

sustained over time, is needed to prevent stigma, challenge discrimination when it occurs in specific settings, and promote and protect HIV-related human rights. There is an urgent need to integrate anti-stigma and antidiscrimination elements more consistently and explicitly into AIDS programming practice than is currently the case. Community based programs to specifically address the stigma is critical. The HIV positive persons' networks have been highly successful in organizing community based efforts to defeat stigma and such activities should be scaled up. With experience of dealing with mental illness-related stigma, mental health professionals are ideally suited to deal with HIV related stigma.

LIMITATIONS

1. The sample was drawn from patients attending a large tertiary hospital. The finding observed, therefore, cannot be generalized to the community.
2. Small size of the sample.
3. 80 % of the sample was males.
4. Patients with mental or physical illness of such severity so as to preclude the assessment had to be excluded from the study. This may influence the prevalence rate.
5. Personality factors were not assessed.
6. Relatives were not interviewed.

CONCLUSION

The study using a case control design compared the HIV positive patients and leprosy patients – two chronic medical conditions that are subjected to social stigma. The study examined and compared the prevalence of psychiatric morbidity, physical distress and perception of stigma between the two groups. Depression was the most common psychiatric morbidity among HIV positive patients (16%) followed by alcohol dependence (13%). Compared with the group of leprosy patients HIV positive patients differed in the following:

- 1) The mean total scores obtained through MADRS was high among the HIV positive patients compared with the leprosy patients ($p = 0.003$)
- 2) The family history of psychiatric morbidity was more among the HIV positive patients compared with the leprosy patients ($P < 0.05$)
- 3) The physical distress was higher among the leprosy patients compared with the HIV positive patients ($p < 0.001$)
- 4) The perception of stigma was greater in among the HIV positive patients compared with the leprosy patients ($P = 0.01$)

It is important to identify and treat depression and alcohol dependence among the HIV positive patients as these two conditions also interfere with the HIV treatment adherence. Moreover both these clinical conditions can have significant negative impact on disability, quality of life and economic productivity. Stigma and discrimination should be urgently addressed in all HIV care programs. Involvement of HIV positive networks and community programs to address stigma are vital. Mental health professionals can play an important role in HIV-related stigma reduction programs.

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APPENDIX 1

SEMI STRUCTURED PROFORMA

1. Date of assessment
2. Date of diagnosis
3. Time interval (between the diagnosis of the disease and assessment)
4. Received pre test counseling
5. Received post test counseling
6. Socio demographic data
 - 1) Name
 - 2) Age
 - 3) Sex (male/female)
 - 4) Marital status (married/single/divorced/widow)
 - 5) Religion (Hindu/Christian/Muslim, others)
 - 6) Occupation (employed/unemployed)
 - 7) Region (rural/urban)
 - 8) Education (primary, secondary, higher secondary, college)
 - 9) Socio economic status (low, middle, high)
 - 10) Social support (poor/moderate/good)
7. HIV status of the spouse
8. Mode of transmission
9. Current psychiatric diagnoses
10. Past history (psychiatric diagnoses; absent/present)
11. Family history (psychiatric diagnoses; absent/present)
12. Physical distress (pain/disability/disfigurement)
13. Perception of HIV stigma (agree/disagree/don't know)
14. CD4 count
15. VDRL Test

APPENDIX - 2
HAMILTON ANXIETY SCALE

Patient Name _____

Date : _____

- | | | | |
|------------------------------------|--|------------|--|
| 0 = absent | | 1 = Mild | |
| 2 = Moderate | | 3 = Severe | |
| 4 = Very severe, Grossly disabling | | | |

Answer every question by entering numeral in appropriate box Score

ANXIOUS MOOD Worries, anticipation of the worst, fearful anticipation, irritability	
TENSION Feeling of tension, fatiguability, startle response, moved to tears easily, trembling, feeling of restlessness, inability to relax	
FEARS Of dark, of strangers, of being left alone, of animals, of traffic, or crowds.	
INSOMNIA Difficulty in falling asleep, broken sleep, unsatisfying sleep and fatigue on walking, dreams, nightmares, night terrors	
INTELLECTUAL Difficulty in concentration, poor memory	
INTELLECTUAL Difficulty in concentration, poor memory	
DEPRESSED MOOD Loss of interest, lack of pleasure in hobbies, depression, early waking diurnal swing.	
SOMATIC (Muscular) Pain and aches, twitchings, stiffness, myoclonic jerks, grinding of teeth, unsteady voice, increased muscular tone	
SOMATIC (Sensory) Tinnitus, blurring vision, hot and cold flushes, feelings of weakness, pricking sensation.	
CARDIOVASCULAR SYMPTOMS Tachycardia, palpitations, pain in chest, throbbing of vessels, fainting feelings, sighing dyspnoea.	
RESPIRATORY SYMPTOMS Pressure of constriction in chest, choking feelings, sighing, dyspnoea	
GASTROINTESTINAL SYMPTOMS Difficulty in swallowing, wind, abdominal pain, burning sensations, abdominal fullness, nausea, vomiting, borborygmi, looseness of bowels, loss of weight, constipation.	
GENITOURINARY SYMPTOMS Frequency of micturition, urgency of micturition, amenorrhoea, menorrhagia, development of frigidity, premature ejaculation, loss of libido, impotence	
AUTONOMIC SYMPTOMS Dry mouth, flushing, pallor, tendency to sweat, giddiness, tension headache, raising of hair	
BEHAVIOUR AT INTERVIEW Fidgeting, restlessness or pacing, tremor of hands, furrowed brow, strained face, sighing or rapid respiration, facial pallor, swallowing etc.	
TOTAL	

APPENDIX 3

BECK'S DEPRESSION INVENTORY

1. Sadness

0 I do not feel sad.

1 I feel sad

2 I am sad all the time and I can't snap out of it.

3 I am so sad and unhappy that I can't stand it.

2. Pessimism

0 I am not particularly discouraged about the future.

1 I feel discouraged about the future.

2 I feel I have nothing to look forward to.

3 I feel the future is hopeless and that things cannot improve.

3. Sense of failure

0 I do not feel like a failure.

1 I feel I have failed more than the average person.

2 As I look back on my life, all I can see is a lot of failures.

3 I feel I am a complete failure as a person.

4. Dissatisfaction

0 I get as much satisfaction out of things as I used to.

1 I don't enjoy things the way I used to.

2 I don't get real satisfaction out of anything anymore.

3 I am dissatisfied or bored with everything.

5. Guilt

0 I don't feel particularly guilty

1 I feel guilty a good part of the time.

2 I feel quite guilty most of the time.

3 I feel guilty all of the time.

6. Expectation of punishment

0 I don't feel I am being punished.

1 I feel I may be punished.

2 I expect to be punished.

3 I feel I am being punished.

7. Dislike of self

0 I don't feel disappointed in myself.

1 I am disappointed in myself.

2 I am disgusted with myself.

3 I hate myself.

8. Self Accusation

0 I don't feel I am any worse than anybody else.

1 I am critical of myself for my weaknesses or mistakes.

2 I blame myself all the time for my faults.

3 I blame myself for everything bad that happens.

9. Suicidal ideation

0 I don't have any thoughts of killing myself.

1 I have thoughts of killing myself, but I would not carry them out.

2 I would like to kill myself.

3 I would kill myself if I had the chance.

10. Episodes of crying

0 I don't cry any more than usual.

1 I cry more now than I used to.

2 I cry all the time now.

3 I used to be able to cry, but now I can't cry even though I want to.

11. Irritability

0 I am no more irritated by things than I ever was.

1 I am slightly more irritated now than usual.

2 I am quite annoyed or irritated a good deal of the time.

3 I feel irritated all the time.

12. Social withdrawal

0 I have not lost interest in other people.

1 I am less interested in other people than I used to be.

2 I have lost most of my interest in other people.

3 I have lost all of my interest in other people.

13. Indecisiveness

0 I make decisions about as well as I ever could.

1 I put off making decisions more than I used to.

2 I have greater difficulty in making decisions more than I used to.

3 I can't make decisions at all anymore.

14. Change in body image

0 I don't feel that I look any worse than I used to.

1 I am worried that I am looking old or unattractive.

2 I feel that there are permanent changes in my appearance that make me look unattractive.

3 I believe that I look ugly.

15. Retardation

0 I can work about as well as before.

1 It takes an extra effort to get started at doing something.

2 I have to push myself very hard to do anything.

3 I can't do any work at all.

16. Insomnia

0 I can sleep as well as usual.

1 I don't sleep as well as I used to.

2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.

3 I wake up several hours earlier than I used to and cannot get back to sleep.

17. Fatigability

0 I don't get more tired than usual.

1 I get tired more easily than I used to.

2 I get tired from doing almost anything.

3 I am too tired to do anything.

18. Loss of appetite

0 My appetite is no worse than usual.

1 My appetite is not as good as it used to be.

2 My appetite is much worse now.

3 I have no appetite at all anymore.

19. Loss of Weight

0 I haven't lost much weight, if any, lately.

1 I have lost more than five pounds.

2 I have lost more than ten pounds.

3 I have lost more than fifteen pounds.

20. Somatic preoccupation

0 I am no more worried about my health than usual.

1 I am worried about physical problems such as aches and pains, or upset stomach, or constipation.

2 I am very worried about physical problems and it's hard to think of much else.

3 I am so worried about my physical problems that I cannot think about anything else.

21. Low level of energy

0 I have not noticed any recent change in my interest in sex.

1 I am less interested in sex than I used to be.

2 I have almost no interest in sex.

3 I have lost interest in sex completely.

INTERPRETATION OF THE BECK DEPRESSION INVENTORY

Total Score _____ Levels of Depression

1-10 _____ These ups and downs are considered normal

11-16 _____ Mild mood disturbance

17-20 _____ Borderline clinical depression

21-30 _____ Moderate depression

31-40 _____ Severe depression

over 40 _____ Extreme depression

APPENDIX- IV

BECK'S SCALE FOR SUICIDE IDEATION

I. Characteristics of attitude toward living / dying

1. $\text{ÁõÇ} \text{Á}_3 \text{£®}$
 - 0 $\text{_} \text{©õμõP C}_3 \text{UQÓx (ΚμíÄUS C}_3 \text{UQÓx) AÀ} \text{»x EÖv}^- \text{õP C}_3 \text{UQÓx.}$
 1. $\text{Á}_3 \text{£®} \text{£} \text{»ÄÚ©õP C}_3 \text{UQÓx (öPög\®)}$
 2. $\text{Á}_3 \text{£} \text{÷© CÀø} \text{»}$
 2. $\text{\\õP} \text{Á}_3 \text{£®}$
 - 0 $\text{GxÄ® CÀø} \text{»}$
 1. öPög\® EÖÍx
 2. $\text{EÖv}^- \text{õÚ} \text{Á}_3 \text{£®}$
 3. $\text{ÁõÇ} / \text{\\õP Põμn[PÒ}$
 - 0 $\text{ÁõÇ C}_3 \text{US® Põμn[PÒ} \text{\\õÁuØPõÚ Põμn[PøÍ} \text{Äh AvP PÚ©õÚøÁ.}$
 1. $\text{ÁõÇÄ®, \\õPÄ® C}_3 \text{US® Põμn[PÒ} \text{\\© AÍÁõÚøÁ}$
 2. $\text{\\õÁuØPÚ Põμn[PÒ, ÁõÇ C}_3 \text{US® Põμn[PøÍ} \text{Äh AvP PÚ©õÚøÁ.}$
 4. $\text{_} \text{^-} \text{Ø]°À uØöPõø} \text{»} \text{ö\`x öPõÖÍ} \text{÷Ásk® GßÓ BÁÀ (Bø\)}$
 - 0 $\text{GxÁ® CÀø} \text{»}$
 1. $\text{£} \text{»ÄÚ©õP EÖÍx}$
 2. $\text{ªu©õP AÀ} \text{»x EÖv}^- \text{õP C}_3 \text{UQÓx.}$
 5. $\text{uõÚõP} \text{^-} \text{Ø] ö\`x uØöPõø} \text{»} \text{ö\`x öPõÖÍõÄmhõ} \text{¾®}, \text{B£zuõÚ} \text{\\|ø} \text{»PÍ} \text{¼} \text{çx ußøÚ PõzxU öPõÖÍõ©À C}_3 \text{£vÀ Dk£øk.}$
 - 0 $\text{ÁõÍUøPø^- U Põ} \text{£ØÖU öPõÖÍ} \text{÷Ási}^- \text{-ßöÚa\|UøP} \text{²hß C}_3 \text{zuÀ}$
 1. $\text{ÁõìÄ} / \text{\\õÄ BQ}^- \text{ÁØøÓ} \text{Äv}^\text{°} \text{ß £õÄ} \text{ÄkuÀ (Euõμn®)} \text{\\õø} \text{»ø^- U PhUS®} \text{÷£õx A} \text{»m]^-} \text{©õP C}_3 \text{zuÀ}$
 2. $\text{ÁõìÁuØS AÁ]^-} \text{©Ú]} \text{»} \text{^-} \text{Ø]PøÍ} \text{ö\`^-} \text{õ©À C}_3 \text{£x (Euõμn®)} \text{\\°UPøμ} \text{Ä^-} \text{õvUPõμ} \text{° Cß} \text{¼} \text{ß F] GkUPõ©À C}_3 \text{£x.}$
- #### II. Characteristics of suicide ideation wish
6. **GÆÁÍÄ ÷{μ® C}_3 \text{UQÓx?}**
 0. $\text{AÆÄ} \text{^-} \text{÷£õx} \text{Áçx} \text{÷£õS® Gsn®} \text{ªPU SøÓçu} \text{÷{μ®} ©mk®.}$
 1. $\text{]sh} \text{÷{μ[PÐUS Açu Gsn® (|øÓ^-)} \text{C}_3 \text{UQÓx.}$
 2. $\text{öuõh} \text{°çx AÀ} \text{»x HÓzuõÇ} \text{öuõh} \text{°çx C}_3 \text{US® Gsn®}$
 7. **Frequency**
 0. $\text{Cçu Gsn® A§} \text{°Á©õP} \text{Á}_3 \text{®}$
 1. $\text{AÆÄ} \text{^-} \text{÷£õx} \text{Á}_3 \text{®}$
 2. $\text{öuõh} \text{°çx C}_3 \text{UQÓx.}$

8. **Attitude towards ideation**
 0 Cϕu Gsnzøu ©Úv¼,ϕx APØÔ ÂkÃ°Píõ? (APØÔ ÂkÁx)
 1. uØöPöø» Gsnzøu" £ØÔ Gϕu -iÄ® CÀ»öv, zuÀ
 2. Aϕu Gsnzøu HØÖU öPöÔÁx
9. **uØöPöø» ö\`À «x C, US® Pmk"£öök**
 0. Gsnzøu Pmk"£kzu C-¾®
 1. Pmk"kzu -i²® Gß£x \¶- öPz öu¶- ÁÁø»
 2. Pmk"£öök CÀø»
10. **uØöPöø» ö\`x öPöÔÁøuz ukUPU Ti- Pöµn[PÔ (E®) Sk®£®,
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11. **÷- ö]zxU öPöskÖí uØöPöø»UPöÚ Pöµn[PÔ**
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- III. **Characteristics of Contemplated Attempt**
12. **uØöPø» ö\`x öPöÔÐ® -øÓ
 (SÔ"µmh -øÓ vmh® wmkua)**
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13. **Method - availability / Opportunity**
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 0 ÷u°ϕöökzv, US® -øÓ QøhUP Áö "µÁø». \ϕu°°£® CÀø».
 1. Cϕu -øÓUS |øÓ- ÷{µ-® -Ø]²® ÷uøÁ. Cϕu -øÓø- Aøh-
 \ϕu°°£® AvP® CÀø».
 2(a) Cϕu -øÓ²® Aøu ö\`x öPöÔÍUTi- \ϕu°°£-® QøhUS®.
 2(b) Gv°Pö»zvÀ Cϕu -øÓ²®, Aøu ö\`- \ϕu°°£-® Qmk® GßÓ
 Gv°£ö°!

14. **Cçu Põŋ zøu GÆÁÍÄ yμ® ö\`x öPõÒÍ-í²® GßÆøu" £ØÔ⁻ P, zx.**
0. øuŋ® C»ø». EÖv CÀø», £⁻® ö`x öPÒÐ® \ð©°zv⁻® CÀø».
 1. øuŋ®, \ð©°zv⁻® BQ⁻ ÁØÓø" £ØÔ⁻ öuíÁÚ P, zx CÀø».
 2. øuŋ®, \ð©°zv⁻® BQ⁻ ÁØÓÓ" £ØÔ EÖv⁻ õÚ ußÚ®αUøP E Óíx.

15. **⁻ Ø]ø⁻ U SÔzx C, US® Gv°£õ°!**

0. GxÄ® CÀø»
1. \ŋ⁻ õPz øuŋ⁻ ÁÀø».
2. C, UQÓx.

IV. **ACTUALISATION OF CONTEMPLATED ATTEMPT**

(]çuøÚø⁻ ö\` »õUSuÀ)

16. **HØ£õkPÒ**

0. HxÄ® CÀø»
1. KμίÄUS EÓíx (E®) ©õzvøμPøí ÷\°zx øÁUP Bμ®£®
2. ⁻Êø©⁻ õP EÓíx (E®) ©õzvøμPÒ C, UQßÓÚ. SskPÒ ÷£õmh x"£õUQ BQ⁻ øÁ u⁻ õμõP C, "£x.

17. **uØõPõø»U Piu®**

0. GxÄ® CÀø»
1. GÊu Bμ®αzuõ°ØÖ. BÚõÀ ⁻iUPÁÀø».
2. Ax GÊ® Gsn® ©mk® C, UQÓx.

18. **\ðøÁ Gv°÷{õUQ ö\`v, US® CÖv HØ£õkPÒ – (E®) Cß`μßì E°À £ŋ_PÒ**

0. GxÄ® CÀø»
1. Aøu" £ØÔ Gso]» HØ£õkPÒ ö\`v, UQÓõ°.
2. Aøu" £ØÔ {ßS vmhªmk HØ£õkPøí ⁻izv, "£x.

19. **B÷»õ\øÚ ö\`x öPõsi, US® ⁻ Ø]ø⁻ " αÓŋhª, øx ©øÓ"£x H©õøÖÁx.**

(Refers to Communication of Ideation to interviewing clinician)

0. Gsn[PÒ öÁÎˆ£øhˆ õPU TÖuÀ
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APPENDIX 5

MONTGOMERY-ÅSBERG DEPRESSION RATING SCALE (MADRS)

1. Apparent sadness Representing despondency, gloom and despair (more than just ordinary transient low spirits), reflected in speech, facial expression, and posture. Rate by depth and inability to brighten up.

0 = No sadness.

2 = Looks dispirited but does brighten up without difficulty.

4 = Appears sad and unhappy most of the time.

6 = Looks miserable all the time. Extremely despondent

2. Reported sadness Representing reports of depressed mood, regardless of whether it is reflected in appearance or not. Includes low spirits, despondency or the feeling of being beyond help and without hope.

0 = Occasional sadness in keeping with the circumstances.

2 = Sad or low but brightens up without difficulty.

4 = Pervasive feelings of sadness or gloominess. The mood is still influenced by external circumstances.

6 = Continuous or unvarying sadness, misery or despondency.

3. Inner tension Representing feelings of ill-defined discomfort, edginess, inner turmoil, mental tension mounting to either panic, dread or anguish. Rate according to intensity, frequency, duration and the extent of reassurance called for.

0 = Placid. Only fleeting inner tension.

2 = Occasional feelings of edginess and ill-defined discomfort.

4 = Continuous feelings of inner tension or intermittent panic which the patient can only master with some difficulty.

6 = Unrelenting dread or anguish. Overwhelming panic.

4. Reduced sleep Representing the experience of reduced duration or depth of sleep compared to the subject's own normal pattern when well.

0 = Sleeps as normal.

2 = Slight difficulty dropping off to sleep or slightly reduced, light or fitful sleep.

4 = Moderate stiffness and resistance

6 = Sleep reduced or broken by at least 2 hours.

5. Reduced appetite Representing the feeling of a loss of appetite compared with when-well. Rate by loss of desire for food or the need to force oneself to eat.

0 = Normal or increased appetite.

2 = Slightly reduced appetite.

4 = No appetite. Food is tasteless.

6 = Needs persuasion to eat at all.

6. Concentration difficulties Representing difficulties in collecting one's thoughts amounting to an incapacitating lack of concentration. Rate according to intensity, frequency, and degree of incapacity produced.

0 = No difficulties in concentrating.

2 = Occasional difficulties in collecting one's thoughts.

4 = Difficulties in concentrating and sustaining thought which reduced ability to read or hold a conversation.

6 = Unable to read or converse without great difficulty.

7. Lassitude Representing difficulty in getting started or slowness in initiating and performing everyday activities.

0 = Hardly any difficulty in getting started. No sluggishness.

2 = Difficulties in starting activities.

4 = Difficulties in starting simple routine activities which are carried out with effort.

6 = Complete lassitude. Unable to do anything without help.

8. Inability to feel Representing the subjective experience of reduced interest in the surroundings, or activities that normally give pleasure. The ability to react with adequate emotion to circumstances or people is reduced.

0 = Normal interest in the surroundings and in other people.

2 = Reduced ability to enjoy usual interests.

4 = Loss of interest in the surroundings. Loss of feelings for friends and acquaintances.

6 = The experience of being emotionally paralysed, inability to feel anger, grief or pleasure and a complete or even painful failure to feel for close relatives and friends.

9. Pessimistic thoughts Representing thoughts of guilt, inferiority, self-reproach, sinfulness, remorse and ruin.

0 = No pessimistic thoughts.

2 = Fluctuating ideas of failure, self-reproach or self-depreciation.

4 = Persistent self-accusations, or definite but still rational ideas of guilt or sin. Increasingly pessimistic about the future.

6 = Delusions of ruin, remorse or irredeemable sin. Self-accusations which are absurd and unshakable.

10. Suicidal thoughts Representing the feeling that life is not worth living, that a natural death would be welcome, suicidal thoughts, and preparations for suicide. Suicide attempts should not in themselves influence the rating.

0 = Enjoys life or takes it as it comes.

2 = Weary of life. Only fleeting suicidal thoughts.

4 = Probably better off dead. Suicidal thoughts are common, and suicide is considered as a possible solution, but without specific plans or intention.

6 = Explicit plans for suicide when there is an opportunity. Active preparations for suicide.