HIV & psychiatric disorders

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HIV infection and psychiatric disorders have a complex relationship. Being HIV infected could result in psychiatric disorders as a psychological consequence of the infection or because of the effect of the HIV virus on the brain. Disorders may be as varied as depression, post-traumatic stress disorders, AIDS phobias, grief and the whole gamut of cognitive disorders. In addition, several psychiatric conditions may predispose individuals to acquiring HIV infection as a consequence of their influence on behaviour. There is also strong evidence of the relationship of substance use disorders and severe mental illnesses with HIV infection. HIV related psychiatric disorders also offer a challenge to clinicians in issues of differential diagnosis and management. Majority of the work in India has focused on substance use and HIV, and to a lesser extent on the psychiatric effects of HIV infection. Given the magnitude of the problem in the country and the multiple physical and psychological stressors that persons with HIV face in India, more research is needed.

Key words AIDS - depression - HIV - mental illness - substance use

Psychological and psychiatric issues associated with HIV infection have received considerable attention in the last decade owing to the emotional impact of the disease and its effect on an individual’s personal, sexual, occupational and social life. Apart from the more obvious impact of HIV on mental health, there are several ways in which HIV infection and psychiatric disorders are linked.

(i) HIV infection owing to its malignant course and the associated stigma often results in emotional reactions of a serious nature among those infected. (ii) The HIV has direct effects on the brain that may lead to neurocognitive disturbances, psychosis or behavioural changes. (iii) Opportunistic neurological and systemic infections and their treatment may lead to neuropsychiatric problems. (iv) Some of the drugs used in HAART (highly active antiretroviral therapy) are known to be associated with psychiatric side effects. (v) Persons with severe mental illness are known to be vulnerable to HIV infection and there are special management concerns in this population. (vi) Substance abuse and HIV are linked in direct ways (intravenous drug use: IVDU) and in indirect ways by their influence on sexual behaviour. (vii) Treatment adherence and course of illness have been found to be influenced by emotional factors and substance use.

The above description indicates the complexities of the link between psychiatric syndromes and HIV infection. In a given individual, more than one of these factors might be involved thus leading to complex clinical manifestations and requiring a multipronged
approach in assessment and management of the problem.

This review attempts at delineating each of these links between HIV and psychiatric disorders; and also reviews the available Indian literature and discusses it in the context of research from other parts of the world.

Psychiatric disorders as a reaction to HIV infection

AIDS phobia: Phobias and fears related to HIV and AIDS have been reported early in the history of HIV infection\(^1\). There have been reports from the late eighties describing the problems of the “worried well”-\(i.e.,\) people with an overwhelming fear of having contracted AIDS. The initial reports were predominantly from homosexual men and users of IVD who were particularly at risk for HIV infection\(^1,2\). Subsequently, there have been reports of a spectrum of disorders such as anxiety disorders, panic, hypochondriacal beliefs and obsessive-compulsive disorders related to HIV infection\(^1,3\). These could be primary disorders or manifested as psychopathology in depression and/or psychotic disorders. Cases of AIDS related phobia among heterosexuals with risky sexual behaviour have been reported from India\(^2\). In addition to distinct AIDS related fears, somatization disorders have been reported among men with risky behaviour who tested negative for HIV \(^3\) but continue to have concerns about the infection. AIDS related fears and phobias have been associated with an anxious temperament, are more among those with health anxiety, and are often associated with misinformation and inadequate knowledge, particularly in countries like India.

Bereavement and grief: The severity of HIV and AIDS, the loss of health, a decrease in functioning, the deterioration of body integrity, and the anticipatory loss of life may also result in bereavement. Homosexual men with AIDS who have witnessed multiple deaths during their illness experience recurrent episodes of bereavement\(^4\). The bereaved person typically considers symptoms of sadness, insomnia, poor appetite, and weight loss as being normal reactions to their loss. Though these symptoms share common characteristics with major depression, these do differ in the presence and intensity of survivor guilt, loss of warmth in relationships, emergence of hostility, and the preoccupation with images of the deceased. If bereavement persists for longer than two months and is accompanied by increasing functional impairment, morbid preoccupation with worthlessness, and marked psychomotor retardation, the diagnosis of major depressive episode can be established. If bereavement remains unresolved with persistent yearning, over identification with the deceased, and an inability to express sadness or rage, then grief resolution therapy should be offered. In India, bereavement in the context of AIDS has not been systematically studied. However, it has been reported that because the deaths due to HIV infection are shrouded in stigma and secrecy, and incomplete funeral and death rituals, it acts as a risk factor for unresolved family grief\(^5,6\). In addition in Africa and India, HIV infection in a family is associated with multiple losses as more than one person is usually infected and anticipatory grief at the possible loss of more than one person is often a feature\(^7,8\). More research in this area is needed to guide health workers in managing this problem in a culturally sensitive manner.

Anxiety disorders: Anxiety disorders may manifest throughout the course of HIV infection, with a general trend for increased prevalence of these disorders as the illness progresses. Researchers have reported a prevalence range of 29 to 38 per cent\(^10\) depending upon the stage of illness. A study demonstrated elevated level of panic disorders in HIV positive men with unresolved grief compared to those with resolved grief\(^11\). Using Hospital Anxiety and Depression Scale, a study conducted on a group of 51 seropositive persons at a tertiary care centre in south India\(^12\), found 36 per cent of the patients to score above the cut-off level for diagnosis of anxiety disorders. The majority fulfilled the diagnostic criteria of generalized anxiety disorder. Pain, concurrent alcohol abuse/dependence, poor family support and presence of AIDS in the spouse accounted for 57 per cent of the total variance in the level of anxiety. In comparison with the western studies, the number of individuals diagnosed as having anxiety disorders in this study was higher. It is notable that the sample in this study
differed from that in the western studies in terms of recruiting greater number of individuals symptomatic (55% of the total sample) for HIV infection. Thus physical suffering could account for the higher rate of anxiety disorders. In addition, cultural factors like stigma, relative lack of appropriate treatment facilities, poor access to the health care, and low educational level could have significantly contributed. Since the individuals were assessed for anxiety soon after revelation of HIV status (within 2-3 months), it could also account for the higher incidence of anxiety disorders in this study.

Post-traumatic stress disorders and multiple loss syndromes have been described in some persons who have experienced AIDS related multiple losses. HIV positive women have a higher prevalence of post-traumatic stress disorder symptoms. Evaluation of anxiety in HIV infected individuals should take into account the variety of medical conditions, which can present with anxiety symptoms. Many of the medications used in treatment of HIV/AIDS have been reported to cause anxiety as a possible side effect. Psychoactive substances, both prescribed and recreational, should also be considered in evaluation of anxiety.

Depression in HIV infection: Depression is the commonest psychiatric syndrome reported in studies among HIV infected individuals. Major depression in HIV-positive population is elevated about two fold above those in healthy community sample. Rates of depression have ranged from 5 to 25 per cent or even higher. The study conducted at the specialty HIV clinic at a tertiary care centre of south India reported that 40 per cent of the seropositive individuals studied suffered from syndromal depression. Majority (90%) of the patients who had depressive symptoms also had prominent anxiety symptoms and fulfilled the ICD-10 criteria for generalized anxiety disorder. Among the depressed patients, 20 per cent expressed death wishes, 12 per cent reported occasional suicidal ideations, and 6 per cent reported persistent suicidal ideations whereas 8 per cent had made attempts to commit suicide. Notably all those, who had attempted suicide, had a past history of psychiatric illness. All the suicide attempts were made during the first week after revelation of the seropositive status.

A two-year follow up study has revealed that 10-25 per cent of seropositive women report depression during the course of the illness. Adjustment disorders with depressed mood are more commonly seen than major depressive disorders. Women with HIV-positive status exhibit higher rates of major depressive disorder and more symptoms of anxiety and depression than HIV-negative women.

Barriers to diagnosing depression: There are several barriers to the diagnosis of depression in HIV infected individuals. Firstly, patients often do not discuss their mood or emotions with health care professionals for fear of being stigmatized further. Secondly, health care professionals may view the depression as a normal reaction to the infection rather than treating it as a condition that needs assessment, referral and treatment. Finally, difficulties in diagnosing depression because of somatic symptoms such as fatigue, loss of appetite, poor concentration may complicate the differential diagnosis in physically ill HIV-infected individuals. To overcome this, the cardinal psychological symptoms of depression should be sought to confirm diagnosis. These include sad mood, distinct loss of interest or pleasure, worthlessness, suicidality, sense of failure or sinfulness. Health care professionals should encourage expression of emotions in clinics and need training in the assessment of psychiatric syndromes.

High prevalence rates of depression have been reported in India among HIV seropositive individuals ranging from 10 to 40 per cent. The difference in rates of depression among studies is often a reflection of the population studied, the tools used and the setting in which the study was conducted. Rates may differ because of the group being studied (gay men, IVDUs, women, bereaved), the setting (community vs. hospice or hospital), stage of illness (later stages of illness reporting higher rates of depression), symptoms such as pain and fatigue and time after disclosure. Studies have revealed conflicting results regarding the influence of stage of illness on anxiety and depression. However, the study conducted at a tertiary care centre of south India found no relation between stage of illness and depression. Depressive symptoms were related to the severity of physical pain (33% reported severe
pain), abuse or dependence on alcohol (47%), and poor social support (43%). Importantly, 43 per cent of the study population had HIV seropositive spouses and 24 per cent had their spouses already diagnosed with AIDS. This was another factor related to the depressive symptoms. The results of this study indicated a higher rate of depression in persons living with HIV/AIDS (PLWHA). However, it should be noted that contrary to studies from west, the sample in this study consisted of a greater proportion of physically symptomatic individuals. In addition, several cultural factors like stigma, low education level, lack of and access to treatment facilities could well underlie the higher prevalence of depression in this sample.

Effect of depression on natural course of HIV infection: While some evidence points to lack of an association between depression and medical outcome, other studies have reported that presence of depressive disorder could result in neglect of physical health and poor compliance to treatment regimen among individuals with HIV infection. Studies have also demonstrated the association of psychological distress and immune system function in HIV spectrum disease. Psychological distress has been associated with decreased number of helper cells and B cells at low levels of viral burden.

HIV status disclosure and depression: Disclosure has several important connotations in HIV in India, especially in the context of stigma and myths surrounding the illness. Disclosure may impact mental health in positive and negative ways. Discussion of one’s HIV status with significant others may open up the opportunities to receive support or may add to stress by causing discrimination and withdrawal of support. Concealing one’s status on the other hand, may be equally stressful and may impact on mental health. A study that examined the impact of disclosure related variables on mental health investigated the nature (voluntary or without consent), extent (number of people to whom disclosure occurred) and the outcome of disclosure among 68 subjects with HIV infection. Voluntary disclosure was reported by 65 per cent while 35 per cent reported that disclosure to their family and friends was made without consulting them. A strong need to disclose was reported by 42 per cent of the sample while 40 per cent reported a moderate need to disclose. The remaining 18 per cent felt no need to disclose at all. The outcome of disclosure was reported to be predominantly positive by 54 per cent whereas the remaining 46 per cent reported a mixture of positive and negative outcomes. Results indicated that it was not the nature or extent of disclosure but the motivation to disclose and the outcome of disclosure that had an impact on mental health and quality of life variables. Positive outcomes and wanting to disclose one’s HIV status were associated with better mental health and better quality of life. It is not clear whether this is related to cause or effect. Persons with better mental health may have better social support and hence may be more motivated to reveal their status or the other way round. Further studies need to address these issues and also look at gender and geographical (rural/urban) differences in the relationship between illness disclosure and mental health.

Gender and depression in HIV infection: Several studies have assessed the role of gender in psychiatric morbidity, particularly depression and anxiety. Majority of studies in India have reported higher rates of depression and anxiety among women compared to men. Women with HIV infection in India face higher caregiver burden, more stigma and poor health care, which probably contribute to the higher prevalence of depression.

Psychiatric problems in children with HIV infection: Despite the growing numbers of children with HIV infection in India, there are no studies addressing the impact of HIV infection on the mental health of children either affected or infected with HIV. A recent prospective cohort study designed to examine long-term outcome among HIV infected children and HIV uninfected infants born to HIV infected parents reported an incidence of 6.17 psychiatric cases per 1000 person-years. This was significantly higher than the incidence of 1.70 cases per 1000 person-years in the general paediatric population. The majority of patients were admitted because of depression or behavioural disorders while 47 per cent underwent multiple psychiatric hospitalizations. The median age at the first psychiatric hospitalization was 11 yr (range: 4-17 yr) when all patients had been perinatally
infected. It was also seen that the knowledge of HIV seropositivity status and having experienced a significant life event were both significantly associated with an increased risk of psychiatric hospitalization. Studies are needed in the Indian context as more and more children are being infected and affected by HIV.

Psychosis in HIV infection

The presence of psychotic symptoms in patients with HIV contributes to difficulties in medical care and residential placement and may have other serious consequences. Psychotic symptoms can appear as a part of delirium, dementia or any other organic brain syndrome. New onset psychotic symptoms are not uncommon in HIV infection. One of the earliest studies reviewed cases of new onset psychosis in HIV infected patients and reported that patients with psychotic symptoms and abnormal computed tomography (CT) and electro encephalography (EEG) findings at the time of presentation with psychosis tended to have relatively rapid deterioration in cognitive and medical status. A subsequent study reviewed records of 20 HIV infected individuals with psychosis without delirium, current substance abuse or previous psychotic episodes. Subjects with psychosis had higher rates of stimulant abuse and at follow up higher mortality rate. They also showed greater neuropsychological impairment.

Mania typically occurs as part of bipolar affective disorder, but it may occur secondary to a variety of medical and pharmacological antecedents in HIV infection. The prevalence of mania is reported to be significantly increased in patients with AIDS compared to the general population. Patients with secondary mania did not differ in clinical characteristics and response to treatment compared to mania associated with bipolar affective disorder. However, neuroradiological abnormalities and cognitive dysfunction have been commonly reported. Hence it is important to differentiate secondary or organic mania from a pre-existing or concurrent manic syndrome. A few cases of AIDS related mania and psychosis have been reported from India, but systematic studies on the clinical manifestation and course of illness are lacking.

Cognitive dysfunction related to HIV infection

Cognitive disorders and subtle cognitive impairment are seen throughout the spectrum of HIV infection. Delirium occurs frequently among hospitalized HIV infected patients with reported prevalence ranging from 29-57 per cent. The etiology of delirium is often multifactorial in HIV infection and patients are susceptible to the development of delirium in the context of underlying HIV brain infection, common use of polypharmacy and the frequency of multiple medical complications. Evaluation and correction of the underlying medical cause of delirium is of primary importance. Prompt management of agitation due to delirium is extremely important because of the distress caused to the patient and family, potential for self harm as well the potential for exposure of HIV to others. Repeated mental status examinations, careful review of medications, thorough physical and neurological examinations, search for infections/metabolic abnormalities, neuroradiologic examination, CSF examination and EEG are essential in evaluation of delirious patients.

Cognitive dysfunction in asymptomatic HIV infection: Neuropsychological impairment among asymptomatic HIV infected persons has been an important area of study. Several studies in India have reported neurocognitive disturbances in this group. Factors such as brain injury, malnutrition, neurological infections, alcohol and depression are all known to have a role in the causation of neurocognitive problems. All the above studies found significant deficits compared to controls, particularly in the areas of fine motor speed and information processing. One study that examined both central and peripheral electrophysiological parameters, found evidence of subtle abnormalities in clinical testing, EEG and brain stem auditory evoked responses.

AIDS dementia

The prevalence of HIV-1-associated dementia (HAD) among otherwise asymptomatic subjects in United States and Europe has been estimated at 15 to 30 per cent. In contrast, a study from India
documented an unusually low incidence (about 1 to 2%) of HAD. It should be noted that the low levels of HAD in economically developing societies like India are often attributed to underdiagnosis, shorter life expectancy, or other factors. In an extensive follow up of earlier studies, however, six cases of HAD were found among 427 HIV-infected asymptomatic individuals (1.4%), indicating that the low incidence of HAD was not an artifact.

To explain this lower incidence of HIV dementia, one of the causes hypothesized has been a compromised chemotactic function of C-Tat protein that is responsible for the monocytic chemotactic activity which has an important role in HIV dementias. It was found that the CS natural variant was defective for monocyte chemotactic activity without a loss in the transactivation property. While the CC mutant was functionally competent for both the functions, in contrast, the SC mutant was defective in both. Therefore, the loss of the C-Tat chemotactic property may underlie the reduced incidence of HAD. Although not presenting conclusive evidence, this study provided the first evidence for a potential epidemiologic phenomenon associated with biological differences in the subtypes of viruses. The scenario may change in India with the early detection of HIV, prompt treatment of opportunistic infections, and HAART therapy. Better documentation and assessment of patients presenting with cognitive dysfunctions is needed to chart the occurrence, comorbidity and course of HIV dementias.

**Psychiatric side effects of anti retroviral drugs**

Antiretroviral drugs although over the years have provided hope, are associated with significant side effects. Various reports have been published on the psychiatric side effects, which range from anxiety to psychosis. Multiple medications for other problems in HIV may also add to the side effects of the antiretrovirals. Foster et al reported a case of antiretroviral-induced psychosis, which remitted once the drug was withdrawn. Other drugs that have been reported to cause psychiatric side effects include efavirenz and nevirapine. With the onset of HAART therapy in India, it is important to record psychiatric side effects of antiretroviral drug combinations. While negative effects of HAART have got attention, benefits have also been recorded. Psychological effects of HAART in terms of mood, hope and life satisfaction studied among a cohort of 173 HIV-positive gay and bisexual men followed up for two years on HAART indicated a definite overall psychological improvement.

**Psychotropic drugs in HIV infection**

Patients with HIV infection commonly receive multiple medications, which include antibiotics, antifungal agents along with antiretroviral medications. Psychotropics used to treat the psychiatric conditions may interact with the antiretroviral medications complicating the picture. The most commonly used drugs are antidepressants, mood stabilizers and antipsychotics.

Treatment of depressive symptoms in patients with HIV has a favourable impact on psychosocial functioning. Antidepressants can alleviate depressive symptoms and improve quality of life. Several randomized controlled studies have demonstrated the efficacy of tricyclic antidepressants but have reported high drop out rate due to adverse effects. Studies have also been conducted to demonstrate the efficacy of selective serotonin reuptake inhibitors (SSRIs) in treatment of depression. Fluoxetine has been evaluated in a double blind randomized controlled study for depression in patients with HIV/AIDS and has been found to be effective. The effect of imipramine and fluoxetine has also been studied on the immune status in depressed patients with HIV illness with no negative effects being noted. One needs to be aware of the drug interactions of protease inhibitors and reverse transcriptase inhibitors that decrease the activity of cytochrome, interfering with the metabolism of SSRIs. Newer antidepressants have also been studied in the treatment of depression. Venlafaxine has been found to be effective and also has minimal potential for interaction with other drugs. Nefazadone, bupropion and reboxetine have also been found to be effective in open label studies.

A significant number of HIV infected persons may need treatment for mood disorders. Several factors must be taken into account when using mood
stabilizers in HIV infected patients. A study reported that valproate increased the HIV-1 replication in vitro. However, clinical evidence indicates that valproic acid therapy does not affect viral load in vivo in HIV infected patients receiving adequate antiretroviral therapy. However, blood levels must be closely monitored. In addition to treatment with valproic acid, there is evidence of bi-directional interactions of carbamazepine and antiretroviral agents at the level of the CYP 450 enzymes. On the one hand, carbamazepine is a potent inducer of the CYP 3A enzyme system, increasing the metabolism of protease inhibitors such as indinavir, and non-nucleoside reverse transcriptase inhibitors. Ritonavir is a potent inhibitor of the same enzyme that increases the risk of carbamazepine toxicity. Parenti et al. treated a group of 10 HIV positive men with lithium and seven had to discontinue the treatment due to side effects. However, no significant changes were noted in CD4 counts while there was a significant decrease in the mixed lymphocytic reaction.

Treatment of psychotic conditions has been less well studied compared to mood disorders. Special precautions must be taken when treating psychosis in HIV infected individuals. It has been noted in several reports that they might be more sensitive to the extrapyramidal side effects associated with dopamine receptor antagonist. In a case series of 20 patients with psychotic symptoms, risperidone was found to be efficacious and to possess fewer side effects than conventional antipsychotics. Literature in this area is completely lacking from India.

**Suicide and HIV**

Suicide is a complex biopsychosocial outcome of depression, hopelessness, isolation and lack of support. HIV infection with all its negative connotations and discrimination can be a harbinger of future suicidal ideation or completed suicide. Several factors have been associated with suicidal ideation among persons infected with HIV. Homosexual orientation, partner’s HIV status, loss of an infected partner, past history of deliberate self harm and presence of physical symptoms have been reported as risk factors. Some of the psychiatric variables predicting suicidal ideation include concurrent substance abuse, past history of depression and presence of hopelessness.

Stigma has been considered as an important variable in predicting suicide and has important implications for India. There is sparse literature on suicide and HIV infection from India, though Indian newspapers have often carried reports of HIV infected persons attempting suicide either due to discrimination or a fear of it.

One study quoted earlier, assessed suicidal ideation and history of attempted suicides in addition to depression among 51 HIV infected persons. The findings revealed persistent suicidal ideations in 14 per cent, death wishes in 20 per cent and suicidal attempts in 8 per cent. The study had a small sample size and may not be representative of the larger HIV infected population in India.

A recent study on suicidal ideation in Bangalore, assessed systematically among 100 HIV infected persons admitted to a care center, reported a higher prevalence of 41 per cent. Demographic risk factors for suicidal ideation reported in this study included female sex (56% of suicidal subjects were females compared to 24% in non-suicidal subjects), lower education level (mean education=5.68 yr in suicidal subjects compared to 8.58 yr in non-suicidal subjects), lower monthly income level (1938 rupees versus 3175 rupees) and presence of physical distress (mean score 15.83 versus 11.75). Psychiatric variables significantly associated with suicidal ideation were similar to those found in western studies and include presence of depression (73% of suicidal patients), hopelessness (mean score on Beck’s hopelessness scale=11.07) and anxiety (29% of suicidal patients). An important finding of this study that has implications for policies and training was the finding that health care related stigma was highly correlated with suicidal ideation and its severity.

**Quality of life and HIV infection - Cross cultural methods of assessment**

Quality of life assessments are important for evaluating treatment response, policies on management and for developing services; however,
these need to be relevant to the culture and context in which these are being studied. The WHOQOL HIV group has evolved a measure of assessing quality of life, keeping cross-cultural relevance as its primary objective and overcoming problems related to using tools developed in western models of care. Items important for quality of life were derived from focus group discussions with different groups of HIV infected individuals, their families and health care providers. Two centres in India, Bangalore and New Delhi, were involved in the development of the tool and the WHOQOL HIV in long and brief forms is currently available in Hindi and Kannada languages.

Analysis of the WHOQOL HIV field test instrument, which was given to 1,334 individuals infected with HIV, from seven culturally diverse centres (Australia, Brazil, Italy, Thailand, Ukraine and two centres in India: Bangalore and New Delhi) revealed good psychometric properties and good discriminant validity of the instrument, with poorest quality of life found for those who reported that they were least well. Men reported poorer physical well-being and level of independence, while women reported poorer environment, social support and spirituality. The instrument provides a promising means for quality of life assessment for patients with HIV/AIDS in diverse cultural settings.

Severe mental illness and HIV - double jeopardy

The bidirectional nature of relationship between severe mental illness and HIV has been well documented. Psychiatric patients are at high risk for acquiring HIV. On the other hand, patients infected with HIV are more susceptible to develop psychiatric illnesses. A large amount of literature has been published worldwide supporting the concept that the psychiatric population as a whole is more vulnerable to contract HIV infection. Several factors such as sexual abuse, homelessness and impaired judgment regarding sexual relationships make them at high risk for HIV. Additionally, use of alcohol and other drugs of abuse make them vulnerable to enter casual or coercive sexual relationship. Studies conducted in Europe and the USA have documented the infection rate among patients with severe mental illness ranging from 4 to 23 per cent, which is much higher than that documented for the general population.

Among psychiatric inpatients having high risk behaviour the seroprevalence rate was reported to be 3.4 per cent. In a prospective study conducted on psychiatric inpatients in India, the seroprevalence rate was found to be 2.11 per cent in a sample of 2283 patients tested for HIV. Though this rate is lower when compared to that in the west, more alarming is the fact that the seroprevalence rate showed an increase from 0.47 per cent in 1993 to 5.33 per cent in 1997, in keeping with increase in HIV infection in general population. In the study 43 patients were found to be seropositive though none of them were earlier documented to be so. Of these 43 patients, 14 per cent were women; 81.4 per cent of these seropositive cases had a primary psychiatric illness while 18.6 per cent were diagnosed to have psychiatric illness secondary to HIV infection. Further analysis found that the group with primary psychiatric illness consisted of non-affective psychosis (14%) (schizophrenia, unspecified psychosis and drug induced psychosis), bipolar affective disorder (9.3%), depression (14%) and alcohol dependence syndrome (44%). Notably, 21 per cent of the total seropositive cases were also diagnosed to have a co-morbid personality disorder in the form of antisocial personality disorder or anxious avoidant personality disorder. Though 44% were diagnosed to have only alcohol dependence syndrome, this percentage rose to 69.7 per cent when patients with dual diagnosis (alcohol dependence syndrome with any other psychiatric diagnosis) were also included. Multiple sexual contact was the commonest route of transmission (65.2%). The impact of psychopathology was evident in two women who reported high risk sexual behaviour only during their psychotic or manic states, whereas 44 per cent reported to have exhibited high risk behaviour under the influence of alcohol. These data indicate that the psychiatric patients are more liable to contract HIV when they are under the influence of alcohol, are actively psychotic or have a combination of the two since these factors enhance the chances of a person to engage in risky and unprotected sexual behaviour.
A recent study assessing HIV seroprevalence among psychiatric outpatient population in a general hospital setting in south India found that the rate was 1.03 per cent which was not very high when compared to the national seroprevalence rate (0.7%) and was less than the seroprevalence rate among the regional community (1.8%). However this result should be seen in the background of the nature of study population. The study included all psychiatric outpatients including minor and severely mentally ill. The whole psychiatric population may not be at high risk but patients diagnosed to have a mood disorder or substance use disorder or both are more likely to have high risk sexual behaviour for contracting HIV.

HIV risk among the mentally ill: Nature of risk behaviour among psychiatric patients was investigated among inpatients in a population of severely mentally ill in India. Though in this study, the sample size was small, high risk behaviour was observed in 59 per cent of patients with schizophrenia, 48 per cent of those with affective disorder and 50 per cent of those with personality disorders. The most frequent high risk behaviour among men was unprotected heterosexual intercourse with a commercial sex worker whereas women patients reported unprotected sex with their known high risk partners. No relation was observed between knowledge about HIV/AIDS and high risk behaviour. In order to replicate the study a more systematic study was conducted in a larger sample of psychiatric inpatients in south India. Using a ten item standardized questionnaire to assess HIV risk (HIV-risk Screening Instrument) the 618 inpatients with severe mental illness were interviewed. The subjects were also assessed for alcohol and other drugs of abuse with Alcohol Use Disorders Identification Test and Drug Abuse Screening Test respectively. The sample consisted of 242 women and 376 men. The results showed that women were more likely to have been sexually active over lifetime (72% versus 57%), over past ten years (66% versus 55%) and over past one year (50% versus 36%) compared to men. Of the total study population, 20 per cent reported high risk behaviour in their lifetime. However, men with severe mental illness were more likely to report high risk behaviour over their lifetime (26% versus 11%) and over last ten years (20% versus 10%) compared to women.

Commonest types of risk behaviours reported included having a risky sexual partner (a partner having sexually transmitted disease, IV drug abuse, having multiple sexual partners), having multiple sexual partners and exchanging money for sex. The risk behaviours differed between the two genders. Women were more likely to have had sexually transmitted infections or exchanging sex for money whereas men were more likely to have exchanged money for sex. A more significant finding was reporting of more than two risk behaviours by 43 per cent of the subjects having a history of risky sexual behaviour. This study did not find IV drug abuse and needle sharing to be among the common risk behaviours, which might be a function of the low prevalence of IV drug use in Bangalore (where this study was conducted), compared to other areas of India. Further analysis of these data revealed young age, married status, diagnosis of mood and/or personality disorder and drug abuse screening test (DAST) score >2 as correlates of being sexually active. Male sex, current use of tobacco, having DAST score>2 (suggesting risk for a drugs abuse problem) and having alcohol use disorders identification test (AUDIT) score >8 (suggesting risk for an alcohol use problem) were found to correlate with risky sexual behaviours. The results of this study reaffirmed the findings of the studies from the west. The association between risky sexual behaviour and substance use remains a consistent finding across the different studies. Evidence points to the likely role of personality factors and situational influences or their interaction. There is also some evidence that reducing substance use may reduce the risky sexual behaviour.

Coercive experiences among women with mental illness and HIV risk: When HIV risk behaviour is looked for especially among women, another aspect that emerges is the occurrence of sexual coercion and abuse of severely mentally ill. In an inpatient sample of 146 female patients, a recent study found that 30 per cent of the sample reported sexual coercion. About 7 per cent reported child sexual
abuse, 16 per cent reported adult sexual abuse whereas 7 per cent reported having been abused during childhood as well as adulthood. Importantly, abuse incidents for such women were not isolated events as majority of the women reported to have been abused at least four or more times. In addition, some women reported having been abused by more than one person. Comparison of women who reported sexual coercion with those who did not indicated that abused women were more likely to report high risk sexual behaviours. When the abused subsample was divided into severe versus milder coercion experiences and compared, those who reported severe coercion also had higher prevalence of HIV-related risk behaviour over lifetime, over last ten years and over last one year. Indeed, it is increasingly recognized that most women infected with HIV became infected through heterosexual intercourse with their primary partner. The women who reported more severe coercion were more likely to be diagnosed with bipolar affective disorder.

Extrapolating from the findings of an earlier study by Chandra et al where high risk behaviour was more common during the actively psychotic or manic phase, it can be inferred that poor judgment, poor negotiation skills and lack of control over sexuality may underlie their high risk behaviours. This study also reflects the importance of assessing psychiatrically ill patients, especially women, for history of sexual coercion during adult life as it tends to demarcate the population at high risk for contracting HIV infection. A surprising finding of this study was that out of 40 women with history of abuse whose clinical records were reviewed, only 5 records mentioned that the patient had undergone sexual abuse or coercion. This finding underlines the underreporting of sexual abuse or coercion during routine clinical interview and emphasizes on the need for clinically sensitive and routine inquiry about it. The other aspect of the interrelationship between HIV and severe mental illness is the appearance of new psychotic illnesses during the course of HIV infection and its clinical manifestations. The emergence of new psychotic/dementing illness in a seropositive person can be due to a variety of reasons including the effect of HIV infection, opportunistic infections, complications of the treatment being given to the patient and other complications of AIDS. Western data indicate a variety of manifestations resulting from psychiatric complications of HIV infection and AIDS. Acute psychosis, mania and dementia frequently occur in conjunction with HIV infection. In the study by Chandra et al HIV related organic psychiatric diagnoses were observed in 8 of the 43 seropositive psychiatric inpatients.

The studies cited above emphasize the need to assess high risk behaviour in the psychiatric population and to consider testing for possible HIV infection and STDs for better treatment, rehabilitation and counselling. The findings with respect to sexual abuse of mentally ill women reemphasize the need for clinically sensitive interviews for possible abuse and its consequences in form of HIV infection as well as mental health. Some of the issues that need further study are the issue of informed consent in such patients, handling dual stigma of mental illness and HIV and occupational hazards of dealing with mentally ill infected with HIV. In addition, dealing with HIV testing in the mentally ill and the management of HIV positive mentally ill requires special expertise. This fact underlines the importance of manpower development in this area.

Though we do not have a published Indian study estimating the cost of treating a severely mentally ill with a co-morbid HIV infection or AIDS, the western data indicate that this may be considerably high. Given the high cost of treating persons with co-morbid serious mental illness and HIV infection or AIDS, the integration of HIV prevention programmes into ongoing management for patients with serious mental illness who are at risk of infection may prove to be a cost-effective intervention strategy.

Finally, certain elements of the relationship between HIV and severe mental illness remain untouched in Indian context. The impact of different behavioural programmes to help patients prevent themselves from contracting HIV remains to be studied. Though the psychiatric risk factors for HIV seem to be visible, the impact of psychiatric treatment of severe mental illnesses on reduction of
risk and factors such as their access to health care facilities remains to be studied.

**Substance use and HIV**

It does not need to be reemphasized that substance use especially IV drug abuse is strongly linked to HIV infection. There has been large amount of research in the area of drug abuse and HIV infection. In fact, IV drug abuse using shared needles is the second most common route of HIV infection. Though risky sexual behaviour is the commonest reason behind HIV transmission in India, substance use/dependence cannot really be discarded as a minor player especially in the north eastern states of India. One fourth (25%) of India’s HIV positive cases come from the northeast states of Manipur, Mizoram, and Nagaland, which contribute only 3 per cent of the country’s total population. The ease of availability of opioids from across the border along with prevailing psychosocial factors have definite contribution towards high prevalence of IV opioid dependence in these states. The situation has been made worse by the poor availability of mental health services in these parts of the country. Though IV drug abusers contract HIV mostly from shared needles; they pass the infection sexually to their spouses. In a study of 161 couples, about 45 per cent of the IV drug abusers infected their spouses with HIV. This horizontal transmission is not limited to HIV but also involves hepatitis B and C viruses. The story does not end here as the vertical transmission of these infections is bound to affect the offspring of these couples. Thus interventions to reduce the risk of HIV transmission in such populations are direly required. The results of an outreach intervention programme in north east India targeting the community and IV drug abusers has hinted at the efficacy of such interventions in reducing the risk of HIV transmission among IV drug users.

**Alcohol and HIV - Paths of linkage**

The nation-wide behaviour surveillance survey conducted by National AIDS Control Organization (NACO) among clients of female sex workers, found that nearly three-fourths of the respondents reported ever having alcohol. A recent study investigating HIV prevalence and risk behaviours in men who have sex with men (MSM) found higher rates of seroprevalence in MSM compared to non MSM (6.5% versus 0.9%), and higher self report of ever having suffered an STD. Use of alcohol and illicit drugs was strong contributory factor even in this population.

Substance use can have a two-fold relationship with HIV risk. Use of substances like alcohol, opioids, cocaine etc., can lead to disinhibition and unprotected sex with multiple partners. On the other hand, a common risk factor in form of a personality attribute may underlie both alcohol use and high risk sexual behaviour. There is limited Indian literature on the association of substance use (other than IV drug use) and high risk sexual behaviour. A study of IV drug abusers in Chennai found a significant association between daily alcohol intakes and risky sexual behaviour. Carey et al investigated the prevalence and correlates of HIV risk among 352 men receiving treatment for substance abuse in India. About 13 per cent of this sample reported to have engaged in sexual practices associated with greater risk. Engaging in risky sexual practices was associated with the presence of a co-occurring psychiatric disorder and higher scores on DAST.

**Risk taking personalities and alcohol use**: Studies on sensation seeking and high risk sexual behaviour in the context of alcohol use have shown that higher sensation seeking is associated with multiple sexual partners and that alcohol use might be a marker for individuals who tend to have risk taking personalities rather than a direct cause of risk taking behaviour. Sensation seeking has been shown to have strong relationship with substance use and risky sexual behaviour in homosexual men. This indicates that sensation seeking may be a personality variable, which may predispose a person both for substance use as well as high risk sexual practices. In India, Chandra et al investigated the patterns and level of sensation seeking in alcohol dependent patients seeking treatment at a mental hospital of south India. Of the total 177 patients screened, 53 (30%) reported high risk sexual behaviour in the last two years. This high risk group was compared to a group of alcohol dependent patients matched for age and diagnosis but
without high risk sexual behaviour. In the high risk group 57 per cent reported sex with commercial sex workers, 97 per cent reported sexual contacts with partners who were known for less than a day, while 90 per cent reported that their sexual partners had other partners as well. All the high risk subjects reported at least ten risky sexual encounters in the last two years under the influence of alcohol. None of the subjects in this group reported using condoms during such sexual contacts and 47 per cent of them reported being treated for STDs. The individuals in this group had much higher total as well as individual scores on different subscales of sensation seeking compared to the low risk group. When the high risk group was stratified into two subgroups based on their risk scores, the subjects with higher risk scores had higher disinhibition scores in the scale for sensation seeking. This finding emphasizes the relationship between higher sexual risk taking and sensation seeking as a personality attribute among the substance using population.

**Substance abuse among the HIV infected:** The impact of HIV infection on substance use has not been studied in Indian context. Some interesting findings have emerged from a study from the US examining the level of substance use and reduction in seriousness of substance use in adults living with HIV. In a sample of 3806 adults living with HIV with alcohol being the most commonly used substance and marijuana the most commonly used drug, 63 per cent of participants had used hard drugs at some time in their lives. Almost half of patients living with HIV (PLH) who had used hard drugs in their lifetime continued to use hard drugs recently, suggesting the pattern of substance use was habitual as opposed to reflecting mere experimentation. Among those continuing to use substances, 40 per cent reported frequent use whereas 32 per cent reported occasional and 28 per cent reported being abstinent. These findings are troubling given the negative health consequences to PLH themselves, and the increased risks of transmission of HIV to others as a result of unprotected sex. When factors distinguishing the frequency of use were examined, health emerged as a significant factor for those who abstained from substance use. PLH who abstained from substances reported better physical health. Abstainers were also distinguished from occasional or frequent users by their lower levels of depression and better mental health functioning. In contrast, PLH who used substances at frequent levels reported a constellation of unhealthy behaviours. Besides frequent use of substances, this group of PLH was more likely to be diagnosed with hepatitis C or D and to have been convicted of a crime. Further, in general, PLH who used substances frequently were using drugs of high seriousness, such as crack and heroin. These data suggest that there are a significant number of PLH that are in need of substance abuse treatment. When the factors associated with the probability of reducing seriousness in substance use were examined, the most significant factor that emerged was time since HIV diagnosis. The longer the PLH knew their HIV positive status, the more likely they were to reduce the seriousness of their substance use. Reduction in the seriousness of substances used was most often made by women. This probably reflects the greater sensitivity of female gender for the therapeutic intervention.

Given the health risks posed by substance use and its association with reduced medication adherence, data suggest that substance abuse treatment is essential in the care of PLH. Therefore, screening and identification of substance misuse and abuse, as well as referral for additional services, should be included in all interventions aimed at improving the physical functioning, mental health, and quality of life of those living with HIV. It has been reported that HIV infected persons with alcohol problems who were engaged in stable substance abuse treatment services, had reduced odds of emergency department attendance. The authors argue that such patients may have decreased intake of alcohol which renders them less vulnerable to develop acute complications. On the other hand, homelessness was associated with more frequent visits to the emergency department which probably might result from poor adherence to substance abuse treatment services and/or poor social support systems. These findings do not prove a causal link, but suggest that substance abuse treatment providers and primary care providers should work to link HIV infected persons with alcohol abuse problems to substance abuse treatment.
Conclusions

Despite the fact that the first report of psychiatric disorders in HIV infection from India was published more than a decade ago, it is only in the last few years that systematic data have been collected and published.

What we know - It is evident from the literature reviewed that some aspects of psychiatric problems and HIV infection are common to India and the rest of the world, while there are certain factors that acquire special importance. Rates of anxiety and depression appear to be similar to the West. Suicide appears to be a major mental health concern and so do gender issues in psychiatric morbidity. Particularly in the context of women, HIV risk seems to be high in those with severe mental illness and places them in a vulnerable position both in acquiring HIV and provision of care. In addition, substance use and HIV infection share links in the same manner as in the West. In certain parts of the country, alcohol use appears to be a major risk for HIV infection while IVD use plays a major role in some parts of the country. Factors that impact quality of life have been delineated largely due to studies done by the World Health Organisation and tools are available in local languages to assess QOL. In addition, disclosure related issues appear to link closely with psychiatric morbidity.

What we need to know - There are several gaps and questions in the area that remain to be answered. Some of the key culturally relevant areas needing enquiry include the role of stigma and disclosure in psychiatric morbidity, the role of spirituality as a protective coping mechanism, access to and cost of health care among those with HIV infection and co-existing psychiatric problems, and the utility of simple pharmacological and psychological interventions in management.

The next decade of research needs to build on what we already have and answer more specific questions related to interventions. The challenges that HAART will bring among HIV infected in India, with regard to treatment adherence and psychiatric side effects is another area that will assume importance. So far, behavioural research in India has not involved the study of immunological parameters and this is another area that needs attention.

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