Chapter-II

Review of Literature
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REVIEW OF LITERATURE

Several earlier researchers have carried out a number of studies on coping in Human Immunodeficiency Virus (HIV) or Acquired Immunodeficiency Syndromes (AIDS). In this chapter such literature information on HIV antiretroviral adherence, with an emphasis on studies among the triply diagnosed population of people living with HIV/AIDS, mental illness and chemical dependency, as reported by earlier researchers, have been reviewed, compiled and presented under different subheads in the following paragraphs:

- Studies related to coping strategies in HIV/AIDS patients
- Studies related to gender differences regarding coping in HIV/AIDS patients
- Studies related to existence of psychopathology in HIV/AIDS patients
- Studies related to gender differences in psychopathology amongst HIV/AIDS patients
- Studies related to coping strategies and psychopathology amongst HIV/AIDS patients

Studies Related to Coping Strategies in HIV/AIDS patients

Pakenham, Dadds and Tesry (1992) examined the relationship between HIV stage, social support, coping strategy and adjustment to HIV amongst HIV infected gay men and sero-negative comparison group participation. It was found that coping strategy especially social support did not differ according to HIV stage.

Brooke, Brook, Linda, Martin, Thet, Masci and Josephine (1999) examined longitudinally the psychosocial correlates of coping strategies among 165 HIV-positive and 179 HIV negative (mean age 39 years) female injection drug users (IDUs). The participants were interviewed twice using a structured questionnaire with
6-mo interviews. The questionnaire included psychological measures as well as the measures of general coping and specific HIV related coping. The data were analyzed using logistic regression analyses. The findings indicated that favorable factors in the psychological domains at time 1 were significantly associated with an increased likelihood at time 2 of the use of general coping and specific adaptive coping strategies, such as problem solving and seeking social support and with a decreased likelihood at time 2 of the use of maladaptive coping strategies, such as aggression and the use of illicit drugs. These finding highlight particular areas of psychological functioning can be targeted by intervention promote adaptive coping and minimize maladaptive coping between HIV positive and HIV negative subjects.

Swindells, Mohr, Justis, Berman, Squier, Wagener and Singh (1999) determined whether the quality of life (QOL) in patients infected with HIV was affected by satisfaction with social support, coping style and hopelessness. One hundred and thirty-eight HIV-infected patients were studied in this multi-centre longitudinal study. The QOL was assessed by Medical Outcome Study Health Survey SF-36, social support by Sarason Social Support Questionnaire, hopelessness by Beck Hopelessness Scale and coping by Billing and Moos Inventory of coping with illness. The QOL did not correlate with age, sex, race, HIV risk factor, education, or marital status. Employment (p= 0.0001), higher income (= 0.03), satisfaction with social support (p= 0.04), regardless of source of that support and problem-focussed coping (p= 0.03) were associated with a significantly better QOL, while the emotion-focussed coping (r= -0.19; p= 0.04), avoidant coping (r= 0.40; p= 0.0001), hopelessness (r= -0.64; p= 0.0001) and AIDS (p= 0.09) were predictors of poorer QOL. The physical functioning correlated positively with employment (p= 0.0001) and inversely with AIDS (p= 0.0002), hopelessness (p= 0.03), avoidant coping (p= 0.03) and age (p= 0.10). At 6 months follow up, QOL score had changed in 20% of the patients, older age (p= 0.01) and lesser satisfaction with social support (p= 0.15) were associated with a decline in QOL, while the adherence with antiretroviral therapy (p= 0.006) was associated with an increase in QOL score. Seven of the 138 patients died during follow up. These patients had significantly lower QOL at baseline than all other patients (p= 0.003). Interventions to alleviate hopelessness, maladaptive coping
and enhancement of satisfaction with social support may improve the overall QOL in HIV-infected patients. The older patients with HIV were less satisfied with their social support, more likely to utilize unhealthy coping styles and experienced a greater decline in QOL over time.

Hart, Whalen, Shin, McInerney, Fisher and Rauch (2000) examined the relationship between problem-focused coping and emotion-focused coping and subjective reports of pain in persons with HIV/AIDS. The HIV-positive 105 participants with mean age 40.7 years completed measures of demographic and medical variables, pain perception and coping methods. The results show that the participants who reported coping through denial reported significantly greater pain severity. It was also found that the women tended to report greater pain and used significantly more emotion-based coping in comparison to men. It was concluded that exploring the relationship between coping styles and perceived pain might provide an important entry point for intervention that could decrease pain over the course of HIV/AIDS.

Leserman, Petitto, Golden, Gaynes, Gu, Perkins, Silva, Folds and Evans (2000) illustrated a model that examined prospectively the effects of stressful events, depressive symptoms, social support, coping method and cortisol levels on progression of HIV-1 infection. The 82 homosexual men (aged 20-51 years) with HIV type-1 infection without AIDS or symptoms of baseline were studied every six months for up to 7.5 years. Cox regression models with time dependent covariates were used adjusting for race, baseline CD4 + count and viral load and cumulative average anti-retroviral medications. The risk of AIDS was approximately doubled for every 1.5 unit decrease in cumulative average increase of one severe stressor, one unit of denial and Su/dl cortisol. Faster progression to AIDS was associated with higher cumulative average stressful life events, coping by means of denial and higher serum cortisol as well as with lower cumulative average satisfaction with social support. The other background (e.g., age and education) and health habit variables (e.g., tobacco use and risky sexual behavior) did not significantly predict disease progression.

Koopman, Gore-Felton, Marouf, Butler, Field, Chen, Israeliski and Spiegel (2000) carried out the studies to examine the relationship of coping, attachment style
and perceived social support to perceived stress within a sample of HIV positive persons. The participants were 147 HIV-positive persons (80 men and 67 women with mean age of 40.4 years). The multiple regression analysis was used to examine the relationship of demographic variables, AIDS status, three coping styles, three attachments style and perceived quality of general social support with total score on perceived stress scales (PSS). The PSS score was significantly associated with less income greater use of behavioural and emotional disengagements in coping with HIV/AIDS and less secure and more anxious attachment styles. These results indicate that the HIV positive persons who experienced the greatest stress in their daily lives were those with lower incomes, those who disengage behavioural/emotionally in coping with their illness and those who approach their interpersonal relationship in a less secure or more anxious style. Therefore, it can be concluded that coping is a necessity, otherwise more stress is experienced.

Pakenham and Rinaldis (2001) examined the utility of a stress and coping model of adjustment to HIV/AIDS. Total 114 HIV-infected gay or bisexual men were interviewed and they completed self-administered scales. Predictors included illness variables (disease stage and number of symptoms), coping resources (optimism and social support), appraisal (threat, challenge and controllability) and coping strategies (problem- and emotion-focussed). Adjustment outcomes were depression, global distress, social adjustment and subjective health status. Results from hierarchical regression analyses indicated that better adjustment was related to an asymptomatic illness stage (HIV patients, meaning that social adjustment of HIV patients who were asymptomatic was better than the AIDS patients and having fewer HIV-related symptoms, greater social support, challenge and controllability appraisals, problem-focussed coping and lower threat appraisals and reliance on emotion-focussed coping. There was limited support for the stress-buffering effects of optimism. Findings support the utility of a stress and coping model of adjustment to HIV/AIDS.

Julie, Cheryl, Feyza and Cheryl (2002) examined the psychosocial correlates of adjustment to HIV/AIDS in a sample of 137 HIV-positive persons (78 men and 59 women) and used the multiple regression analysis to study the relationships among perceived quality of general social support, three attachment styles and three coping
styles with total score on Positive States of Mind Scale (PSOMS) measuring adjustment. The influence of demographic and medical status variables was also accounted for. PSOMS total score was significantly associated with greater satisfaction with social support related to HIV/AIDS, more secure attachment style and less use of behavioral disengagement in coping with HIV/AIDS. These results indicate that for people with HIV or AIDS, the individuals who were more satisfied with their relationships, securely engaged with others and more directly engaged with their illness were more likely to experience positive adjustment.

Turner-Cobb, Gore-Felton, Marouf, Koopman, Kim, Israelski and Spiegel (2002) examined psychosocial correlates of adjustment to HIV/AIDS in a sample of 137 HIV-positive persons (78 men and 59 women). Multiple regression analysis was used to examine the relationships among perceived quality of general social support, three attachment styles and three coping styles with total score on Positive States of Mind Scale (PSOMS) as measure of adjustment. The influence of demographic and medical status variables was also accounted for. The PSOMS total score was significantly associated with greater satisfaction with social support related to HIV/AIDS, more secure attachment style and less use of behavioral disengagement in coping with HIV/AIDS. These results indicate that for people with HIV or AIDS, those individuals who are more satisfied with their relationships, securely engaged with others and more directly engaged with their illness are more likely to experience positive adjustment.

Lagana, Chen, Koopman, Classen, Kimberling and Spiegel (2002) in a study examined the depressive symptomatology in relation to emotional control and chronic pain in persons who were HIV positive. It was aimed to examine the relations of emotional control and chronic pain to depressive symptomatology in people positive with human immunodeficiency virus (HIV) status. In a study of cross-sectional survey participants, one hundred twenty (51 women and 69 men) individuals serologically documented HIV. Based on measures of depressive symptomatology [Centre for epidemiologic studies-depression scale (CES-D)], emotional control (i.e., inhibited expressions of feeling of anger, anxiety or depression and Courtauld emotional control scale) and chronic pain results, the full multiple regression analysis showed
that constant pain, emotional control and antidepressant use were all significant predictor of (and positively associated with) CES-D total score. Within comprehensive rehabilitation programs with these patients, the pain management was a critical issue. Treatment should address patient’s comorbid depressive symptomatology and difficulties with expressing negative emotion.

McCausland and Pakenham (2003) explored the nature of benefit finding in HIV/AIDS care giving and examined relations among caregiver adjustment, benefit finding, and stress and coping variables. A total of 64 HIV/AIDS caregivers and 46 care recipients completed interviews and questionnaires. First, the study aimed to explore the types of benefit associated with HIV/AIDS care giving. Content analyses of caregiver responses to an interview question inquiring about gains from care giving revealed eight benefit themes. Second, the study aimed to examine the relations among caregiver adjustment, both benefit finding and stress, and coping variables. It was hypothesized that number of caregiver reported benefits, social support, challenge and control appraisals, and the problem focussed coping was inversely related to poorer adjustment, whereas, care recipient reported that global distress and illness, caregiver threat appraisal and passive-avoidant emotion-focussed coping were positively associated with poorer adjustment. Correlations indicated that poorer adjustment (measured by global distress, depression, care giving impact, social adjustment and health status) was positively correlated with care-recipient distress, threat appraisals and passive avoidant coping and inversely correlated with social support and number of reported benefits. Unexpectedly, the problem-focussed coping, controllability and challenge appraisals and care recipient illness were unrelated to adjustment. Third, the study aimed to examine relations between benefit finding and stress and coping variables. Correlations indicated that benefit finding was related to social support use, seeking social support coping and problem solving coping. Findings indicate that the benefit finding and stress/coping frameworks have utility in guiding research into adaptation to HIV/AIDS care giving. Results also indicate targets for intervention in the provision of services for HIV/AIDS caregivers.

Stein and Rotheram-Borus (2004) assessed whether coping styles had an influence on physical health outcomes either concurrently or longitudinally in a
sample of HIV-positive youth. Coping styles were characterized as positive, passive, depressive withdrawal and escapist. A cross-sectional latent variable analysis (N=279) assessed associations among environmental stress, self-esteem, social support, coping styles, AIDS symptoms and CD4 count. A more restricted longitudinal analysis (N=174) tested associations among earlier environmental stress, self-esteem, coping styles and AIDS symptoms at follow-up. The CD4 count was not associated with coping styles in the cross-sectional analysis. Concurrent AIDS symptoms were significantly predicted by depressive withdrawal and environmental stress. A passive coping style modestly predicted more AIDS symptoms longitudinally. Correlates of perceived health and well-being of persons with HIV/AIDS are important to investigate in addition to more objective measures (such as CD4 count), which may not be amenable to change through coping style interventions alone.

Vosvick, Gore-Felton, Ashton and Koopman (2004) investigated the relationships between pain, stress, social support and sleep disturbance among a diverse sample of HIV-positive adults. The participants (N=146) completed self-report measures on pain, stress, social support and sleep disturbance. The CD4 T-cell count was obtained from medical records. Greater pain and stress were associated with greater sleep disturbance. Greater assistance from friends was associated with greater sleep disturbance, whereas, greater understanding from friends regarding participants' HIV-related stress was associated with less sleep disturbance.

Leiberich, Brieger, Schumacher, Joraschky, Olbrich, Loew and Tritt (2005) examined 56 of these patients for the influence of distress and coping (assessed by interviews) on physical, cognitive-emotional and social QOL (using the SEL questionnaire). The patients were on average 32.9 years old, with 28.3 months since diagnosis. Seventy percent were male, 82% asymptomatic, 14% with ARC, and 4% with AIDS. Forty-five percent had been infected by homosexual intercourse, 14% by heterosexual intercourse and 41% by IV drug abuse. The patients reported significantly worse physical and cognitive-emotional QOL than healthy subjects. Those HIV-positive persons with great distress showed significantly lower QOL scores. The multiple analyses of regression showed evasive-regressive coping at T1, T2 and T3 levels as negative predictors vs. active, problem-focussed coping as a
positive predictor for nearly all QOL parameters at T3 level. The HIV-positive patients with ARC or AIDS reported more physical complaints and lower physical QOL as compared to asymptomatic persons. Hence, the physicians should suggest psychosocial support to patients with poor QOL scores.

Mo and Coulson (2010) explored the association between online support group use and health status, coping and social support among 640 individuals with HIV/AIDS. Results suggested that frequent users tended to be female, younger, single and in a more advanced disease stage. After controlling for covariates, frequent users reported poorer health than non-users. In addition, both frequent and infrequent users scored higher in planning, active coping, instrumental support and emotional support coping from the brief COPE. No significant difference was found for social support. The results suggest that online support groups might potentially offer some benefits for those living with HIV/AIDS.

Studies Related to Gender Differences regarding Coping in HIV/AIDS patients

Olley, Gxamza, Seedat, Theron, Stein, Taljaard, Reid and Reuter (2003) examined one hundred and forty-nine patients (44 male and 105 female) with HIV/AIDS [mean ± standard deviation (SD) months since diagnosis 5.8±4.1] attending an infectious diseases clinic at Tygerberg Hospital, Cape Town. Subjects were assessed using the MINI International Neuropsychiatric Interview (MINI), the Carver Brief COPE and the Sheehan Disability Scale. In addition, negative life events and risk behaviours were evaluated. This study found that (i) psychopathology was common in both male and female patients with newly diagnosed HIV/AIDS, (ii) male patients were more likely to abuse or depend on alcohol and to engage in risky sexual behaviours than females and (iii) females were more likely to have PTSD and to use planning and religious activities as a means of coping. The most prevalent psychiatric diagnosis was current depression, and the prevalence rate was significantly higher than that obtained in past community surveys and also higher than that seen in previous studies on HIV/AIDS patients in developed countries, which might reflect high levels of stigmatization and stress faced by HIV/AIDS patients in South Africa. Male and female HIV/AIDS patients did not differ significantly on most coping strategies, except that female patients were significantly more likely than males to engage in
planning (t= 2.06, df= 147 and p= 0.003) and religious activities (t= 2.89, df= 147 and p= 0.004) as a way of coping with the disease. There were no significant differences between male and female patients with regard to the degree of disability reported. Fifty-six per cent of the subjects were diagnosed with at least one psychiatric disorder on the MINI. The most frequent diagnosis was major depression (34.9%), followed by dysthymic disorder (21.5%). There was no significant gender difference in the total number of psychiatric diagnoses, or in the prevalence of mood disorders. Females were more likely to have post-traumatic stress disorder (PTSD) than males ($\chi^2= 5.18$, df= 1 and p= 0.02). Conversely, males were significantly more likely to have a diagnosis of alcohol abuse ($\chi^2= 24.56$, df= 1 and p< 0.001) or alcohol dependence ($\chi^2= 16.08$, df= 1 and p< 0.001) than females.

Gordillo, Fekete, Platteau, Antoni, Schneiderman and Nostlinger (2009) observed that emotional support was strongly associated with physical and psychological adjustment in persons living with HIV/AIDS. While gender-differences in health and health behaviors of HIV positive patients were well studied, less was known about how men and women living with HIV/AIDS might differentially perceive and integrate support into their lives, and how it subsequently affected their psychological well-being. This cross-sectional study examined how emotional support received from partners and family/friends and gender explained psychological well-being (i.e., stress, depression, anxiety) in a sample of 409 partner European HIV positive individuals. It was hypothesized that gender could modify the associations between support and psychological well-being such that men could get benefit more from partner-support, whereas, women could get benefit more from family/friend support. Results revealed that regardless of the source of support, the men's well-being was more positively influenced by support than was women's well-being. Women's difficulties in receiving emotional support might have deleterious effects on their psychological well-being.

Studies Related to Existence of Psychopathology in HIV/AIDS patients

Luckhurst (1992) reported that HIV/AIDS is one of the major issues to be faced by the mental health care sector over the next decade. Many mentally ill people already have or will become infected with HIV due to a range of factors including lack of
information and poor risk prevention skills. The others without a previous history of mental illness will develop mental health problems because of the effects of HIV on the CNS. Most people with HIV/AIDS will also experience severe depression and anxiety related to their infection, while the others will develop AIDS related dementia. The HIV/AIDS related training is necessary for mental health professionals so that the people with HIV/AIDS may be given high quality non-discriminatory care.

Judd, Cockram, Mijch and McKenzie (1997) studied to provide an overview of the work of a liaison psychiatry service to HIV/AIDS inpatient unit and particularly to examine the identification of mood and related disorders by referring doctors. The MICRO-CARES prospective clinical database system was used to obtain data on all patients referred to the HIV/AIDS consultation-liaison psychiatry service in an infectious diseases hospital in Melbourne. Three hundred and ninety-two inpatient referrals were made in the two years from 1993 to 1995 with a referral rate of 16.7%. The most frequent reasons for referral were evaluation of coping problems (42%), assessment of possible depression (31%) and assessment of psychotropic medication (24.5%). The most common psychiatric diagnoses were mood disorders (36.5%), psychoactive substance use disorders (22.7%) and organic mental disorders (18.1%). The overall concordance of recognition of depression by the referring doctor and diagnosis of depression by the consultant psychiatrist was 79%, false positive rate 20% and false negative rate 23%. The study concluded that psychiatric comorbidity is common in HIV/AIDS infected patients. The reasons for referral vary from those seen in other inpatient settings. The previously noted problems such as the misdiagnosis of psychiatric disorder and the mislabeling of syndrome recognized by psychiatrists as depression were noted here.

Claypoole, Elliot, Uldall and Russo (1998) examined the progressive neuropsychological dysfunction and complaints of cognitive difficulty, frequently accompanying HIV-1 infection. Providing appropriate treatment to HIV-1 patients requires determination of the extent to which the presentation of cognitive complaints reflects HIV-1 associated neuropsychological abnormalities or represents expression of depressive symptomatology. They prospectively treated 75 HIV-1 patients who were not demented but met criteria for major mood disorder with antidepressants for
12 weeks and compared pre- and post-treatment measures of depression, cognitive complaints and neuropsychological performance. Complaints of difficulty with memory and attention were found to be independent of neuropsychological impairment, whereas, the memory complaints were highly correlated with severity of depression. Cognitive complaints declined significantly across the course of treatment for those patients who responded to antidepressant treatment. All patients exhibited parallel improvement of 12 week follow up neuropsychological examination. The findings suggested that the treatment of depression affects cognitive complaints in HIV-1 persons and those cognitive complaints of patients in asymptomatic or early symptomatic stages of HIV-1 infection may signed the need for evaluation of depression.

Kelly, Rapheal, Judd and Perdices (1998) aimed to investigate the rates of psychiatric disorder in human immunodeficiency virus (HIV) infection in an Australian sample of 229 homosexual and bisexual men (aged 18 to 65 years). A cross-sectional study of a total of 65 HIV sero-positive men and 164 HIV sero-positive men (79 CDC stage II/III and 85 CDC stage IV) was conducted in three Centers. The lifetime and current prevalence rates of psychiatric disorder were evaluated using the Diagnostic Interview Schedule Version III R (DIS-III R). The elevated current and lifetime rates of major depression were detected in both HIV negative and HIV positive homosexual and bisexual men. The lifetime rates of alcohol abuse or dependence were significantly elevated in HIV negative men. Among HIV positive group, the majority of psychiatric disorders detected were preceded by a pre-HIV diagnosis of psychiatric disorder. The major depression represented the disorder most likely to have first onset after HIV infection diagnosis. The lifetime rates of major depression were elevated in this sample of HIV negative and HIV-positive men. In HIV-positive men, the psychiatric disorder was significantly associated with the presence of lifetime psychiatric disorder prior to HIV infection diagnosis.

Walkup, Crystal and Sambamoorthi (1999) studied schizophrenia and major affective disorder among Medicaid recipients with HIV/AIDS in New Jersey. This study was sought to identify and characterize the seriously mentally ill patients with
HIV infection. Medicaid beneficiaries with HIV/AIDS were identified through the merging of New Jersey HIV/AIDS Registry and Medicaid eligibility files. Claims histories were used to classify individuals as having schizophrenia, major affective disorder, or no serious mental illness. Of 8294 individuals, 476 (5.7%) were classified as having schizophrenia and 564 (6.8%) as having major affective disorder. Those with serious mental illness were more likely than other groups to be injection drug users and to have claims indicative of substance abuse. This study shows that individuals with serious mental illness are significant but little-recognized subgroup of those with HIV infection.

Kilbourne, Justice, Rabeneck, Rodriguez-Barradas and Weissman (2001) examined the prevalence of HIV, general medical and psychiatric comorbidities by age based on a recent multisite cohort of HIV infected veterans receiving care, i.e., the veterans with HIV/AIDS three sites study (VACS 3), which includes 881 adult patients with HIV infection enrolled between June 1999 and July 2000. The providers reported their patients' CDC-defined HIV comorbidities, general medical comorbidities (based on Duke and Charlson comorbidity scales) and psychiatric comorbidity. The mean age of participants was 49 years, of which, 54% were African-American. The most common HIV comorbidities were oral candidiasis (21%), peripheral neuropathy (16%) and herpes zoster (16%). The most common general medical comorbidities included chemical hepatitis (53%), hypertension (24%) and hyperlipidemia (17%). The mean number of HIV and general medical comorbidities experienced by patients was 1.1 and 1.4 (P< 0.001), respectively. The older (≥ 50 years) HIV-infected patients experienced a greater number of general medical comorbidities than those < 50 years [1.7 and 1.2 versus (P< 0.001), respectively]. There was no significant difference in mean HIV comorbidity number by age. Based on patient report, 46% had significant depressive symptoms (≥ 10 on 10-items CES-D) and 21% at-risk drinking (≥ 8 on AUDIT). The providers reported that 32% of the patients had anxiety, 4% mania, 4% schizophrenia and 11% cognitive impairment/dementia. General medical and psychiatric comorbidities constituted a higher disease burden for HIV-infected veterans than HIV comorbidities. The
substantial prevalence of these non-HIV comorbidities suggests an important role for
general medical and psychiatric management of HIV-infected patients.

Komiti, Judd and Grech (2001) reviewed suicidal behavior in people with HIV
at any stage of the illness. Most studies had been done on homosexual/bisexual groups
with later data available for heterosexual population or women. Studies showed an
increased rate on suicidal ideation, suicidal attempts and completed suicide in
individuals with HIV/AIDS. There was a high prevalence of psychiatric illness and
substance abuse in those with suicidal behavior. The increased rate of suicidal
behavior in HIV infected persons was consistent with findings in other medically ill
groups with chronic life threatening disorders. However, the assessment of any
possible direct effect of HIV/AIDS on suicidal behavior was confirmed by
methodological limitations of many of the studies. It was suggested that more
longitudinal studies encompassing other affected groups including heterosexual
population, and the women were needed to elucidate the relationship between suicidal
behavior and HIV/AIDS.

Ferrando and Wapenyi (2002) reported that the psychopharmacological
treatment of patients with HIV/AIDS is an important aspect of managing distress and
enhancing quality of life. They reviewed the psychopharmacological management of
depression, anxiety, mania and psychosis in context of HIV/AIDS, with a discussion
of psychotropic-antiretroviral drug interactions. While psychopharmacological
management of HIV/AIDS patients may be complex, there is a substantial amount of
clinical and research information describing both conventional and novel approaches
that are safe and effective. It can be concluded that clinical features appear due to
HIV/AIDS that need to be managed.

Chibnall, Videen, Duckro and Miller (2002) identified demographic, disease,
health care and psychosocial-spiritual factors associated with death distress
(death-related depression and anxiety). The outpatients (n= 70) were recruited from an
urban academic medical centre and proprietary hospital. All patients had life-
threatening medical conditions including cancer, pulmonary, cardiac, liver, or kidney
disease, HIV/AIDS, or geriatric frailty. The measures of death distress, physical
symptom severity, depression and anxiety symptoms, spiritual well-being, social
support, patient-perceived physician communication and patient-perceived quality of health care experiences were administered. In a hierarchical multiple regression model, a higher death distress was significantly associated with living alone, greater physical symptom severity, more severe depression symptoms, lower spiritual well-being and less physician communication as perceived by the patients. Death distress as a unique experiential construct was discriminable among younger patients with specific diagnosable life-threatening conditions but less so among geriatric frailty patients. The findings suggest that the experience of death distress among patients with life-threatening medical conditions is associated with the psychosocial-spiritual dimensions of the patient's life. Attention to these dimensions may buffer the negative affects of death distress.

Baillargeon, Ducate, Pulvino, Bradshaw, Murray and Olvera (2003) conducted a study to reveal the association of psychiatric disorders and HIV infection in the correctional setting. The psychiatric disorders, such as bipolar disorder, schizophrenia and depression, have been associated with both HIV-associated risk behaviors and HIV infection. While the US prison population is reported to exhibit elevated rates of HIV/AIDS and most psychiatric disorders, the scarce information currently exists on the association of these conditions in the prison setting. The present study examined the association of six major psychiatric disorders with HIV infection in one of the nation's largest prison populations. The study population consisted of 336,668 Texas Department of Criminal Justice inmates who were incarcerated for any duration between 1st January 1999 and 31st December 2001. The information on medical conditions and sociodemographic factors was obtained from an institution-wide medical information system. The results showed that inmates diagnosed with HIV infection exhibited elevated rates of major depression, dysthymia, bipolar disorder, schizophrenia, schizoaffective disorder and non-schizophrenic psychotic disorder. These rates persisted in stratified analyses and in a multivariate analysis that statistically adjusted for gender, race and age category. The present cross-sectional studies clearly finding of a positive association between HIV infection and psychiatric diagnoses among inmates hold both clinical and public health relevance.
Kemppainen, Holzemer, Nokes, Eller, Corless, Bunch, Kirksey, Goodroad, Portillo and Chou (2003) described the frequency correlation between anxiety and fear in HIV disease and used the self-care behaviour to manage those symptoms. The data were collected in a convenience sample (N= 422) of HIV-positive subjects. Demographic and disease-related variables were compared for those who did and did not report anxiety and fear. Anxiety and fear were the most frequently reported symptoms (17.3%; n= 73). There were significant differences of genders, level of education and the use of antiretroviral medications. Self-care behaviour (n= 212) for anxiety and fear were grouped into seven categories. Using activities for distraction= 25%, talking to others= 21%, using alternative or complementary therapies= 18%, taking prescribed medications= 10%, using self-talk= 9% using substances= 9% and fear commonly experienced by people with HIV/AIDS. Self-care strategies were imperative in the management of these clinical manifestations.

Roy (2003) investigated the risk factors for suicidal behavior in HIV positive patients. The human immunodeficiency virus substance dependent positive patients who had attempted suicide were compared with HIV positive substance dependent patient who had never attempt suicide for suicide risk factors. Among the 149 HIV positive patients examined, almost half who had attempted suicide were females. Attempters were significantly younger as compare to non-attempters. More attempters had a family history of suicidal behavior. Attempters reported significantly more childhood trauma, scored significantly higher for neuroticism, had experienced significantly comorbidity with depression and more of them had received antidepressant medication. The data suggest that both distal and proximal risk factors are involved in suicidal behavior in HIV positive substance dependent patient.

Volente (2003) examined the association between depression and HIV disease. It was found that the disorders were common among 20 to 32% of people with HIV disease but were frequently unrecognized. The major depression was resuming and disabling illness that typically responds to medications, cognitive psychotherapy, education and social support. A large percentage of emotional distress and major depression associated with HIV disease results from immune suppression, treatment and neuropsychiatric aspects of the disease. The people with a history of intravenous
drug use also have increased the rates of depressive disorders. The untreated depression along with other co-morbid conditions may increase costly clinic visits, hospitalization, substance abuse and risky behaviors, and may reduce adherence to the treatment and quality of life. Human immunodeficiency virus clinicians need not have psychiatric expertise to play a major role in detecting, screening, treating and preventing major role in detecting, screening, treating and preventing major depression. Screening tools improve case finding and reduce major depression in 80 to 90% of patients. The clinicians who mistake depressive signs and symptoms for those of HIV disease make a common error, which increases morbidity and mortality.

Au, Chan, Li, Chung, Po and Yu (2004) examined the relationship among illness related factors, stress, health related quality of life (HRQOL) and psychological distress in persons infected with the human immunodeficiency virus (HIV) living in Hong Kong. The only 55 participants completed questionnaires including a symptom checklist, modified HIV stressor scale (HIVSS) and medical outcomes study short from SF-36. Multiple regression analysis was used to model the SF-36 and HADS scores as a function of illness-related factors as well as the stress count and intensity. The number of symptoms were found to be inversely related to SF=36 general health and positively related to HADS anxiety scores. However, the CD4 count did not have any significant association with any of the scales on HRQOL or psychological distress. After controlling the effect of symptoms, the HIVSS stress count still accounted significantly for additional variance in HADS anxiety and depression as well as the SF-36 social functioning and role-emotional scores. The study supports the possible contribution of psychosocial factors to the HRQOL and psychological distress after controlling the illness-related factors.

Currier, Molina and Kato (2004) conducted a prospective study on the citalopram treatment of major depressive disorder in Hispanic HIV and AIDS patients. Fourteen Hispanic and six non-Hispanic outpatients with HIV, spectrum illness and major depressive disorder were enrolled in a 6 weeks, open-label, flexible does study of citalopram (dose range = 10-40 mg/day). The depressive symptoms of 50% of the 14 patients who completed the study responded to citalopram (mean dose=34 mg/day). The treatment response rate, effective citalopram dose, total number of
reported adverse events and attrition rate did not differ among the ethnic groups. Two patients discontinued treatment because of adverse events (rash and nausea) and four patients discontinued because of non-compliance with the protocol. The findings suggest that citalopram is an effective and well-tolerated antidepressant for Hispanic and non-Hispanic HIV infected patients.

Hutton, Lyketsos, Zenilman and Thompson (2004) conducted a study based on relationship between depression and HIV risk behaviors or sexually transmitted disease (STD) diagnosis at an urban STD clinic. Audio computer-assisted self-interview method was used only 671 STD clinical patients answered the questions about HIV risk behaviours and depression in a large-scale cross-sectional study. A subset of patients (N= 201) was evaluated for current major depressive disorder by interviewers using the non-patient editions of structures clinical interview for DSM-IV. It was observed that the depressed patients were more likely to have sex for money or drugs, to have had sex with an intravenous drug user, to have sex when high on alcohol or drugs, to have a greater number of lifetime sex partners and to abuse alcohol or drugs who were non-depressed patients. The associations of HIV risk behaviours with depression persisted after adjustment for substance abuse. It was concluded that the depression in STD clinic patients is associated with HIV risk behaviors but not STD diagnosis, and the developing strategies to intervene effectively may reduce HIV risk behaviors and improve health outcomes.

Hughes, Jelsma, Maclean, Darder and Tinise (2004) examined the prevalence of people living with HIV/AIDS (PLWA) in South Africa, which was estimated approximately 14.2% of the total population. In the absence of anti-retroviral therapy, PLWA are likely to experience a steady decline in function, as their immune system becomes increasingly compromised. The subjects, who were either in WHO Stage 3 or 4 of the disease and/or had a CD4 count of less than 200, were interviewed after enrolment on the anti-retroviral programme and before the treatment was initiated. They were not yet receiving anti-retroviral therapy. The control group consisted of a community sample of same age range randomly selected from the same area. In the domain of mobility, 30.9% of the subjects reported some or severe problems as compared to 14.8% of the control group (p< 0.001). The corresponding figures for the
other domains were self-care 14.8 and 4.6% (p= 0.016), usual activity 31.7 and 10.2% (p< 0.001), pain/discomfort 69.1 and 33.3% (p< 0.001) and anxiety/depression 33.4 and 24.2% (p= 0.123) for the experimental and control groups, respectively. PLWA reported a VAS score of 60.4 (SD 22.1), which was significantly lower than that of the community sample (80.13, SD 20.4 and p< 0.001). Self-reporting indicates that Health Related Quality of Life is severely comprised in PLWA at Stage 3, 4 and limitations in the 4 domains of mobility, usual activities, pain or discomfort and anxiety or depression constituting major problems for PLWA. There is an obvious need to provide a continuum of care, encompassing not only medical but also physical and mental rehabilitation services. In an area of high HIV prevalence, the provision of appropriate multi-disciplinary health care services to PLWA presents is a major challenge to the health services.

Based on psychological status and quality of life, Kuang, Li, Ma and Liao (2005) made a comparison between HIV/AIDS infected and non-infected people in two counties (Zizhong and Zhaojue) with high rates of AIDS morbidity and HIV infection. HIV/AIDS-infected people were significantly higher in comparison to non-infected people. The total GQOL-74 scores for HIV/AIDS people were significantly lower as compared to those who were non-infected. The score in each of the four dimensionalities (physical function, psychological function, social function and material status) for HIV/AIDS people was lower than that for non-infected people. Depression and anxiety exist commonly among the HIV/AIDS people, and these negative emotions are particularly related to the severity of their disease, substances abuse and lack of social support. The quality of life of HIV/AIDS people is significantly lower than that of the general population, and this is particularly related to the severity of their disease, lack of social support and low level of quality of life.

Pence, Miller, Whetten, Eron and Gaynes (2006) examined mood and anxiety disorders, particularly depression and substance abuse (SA) commonly occurred in HIV-infected people. Total 1125 patients representing 80% of HIV-positive patients were seen over a period of 2.5 years. It was estimated that in the preceding year, 39% of patients had a mood/anxiety diagnosis and 21% SA diagnosis, including 8% with both. Of the patients with a mood/anxiety diagnosis, 76% had clinically relevant
depression and 11% posttraumatic stress disorder. The burden of psychiatric disorders in this mixed urban and rural clinic population in the Southeastern United States was comparable with that reported from other HIV-positive populations and significantly exceeded the general population estimates. Since psychiatric disorders have important implications for clinical management of HIV/AIDS, these results suggest the potential benefit of routine integration of mental health identification and treatment into HIV service sites.

Mijch, Burgess, Judd, Grech, Komiti, Hoy, Lloyd and Gibbie (2006) studied the prevalence and associations of mental health disorder (MHD) among a cohort of HIV-infected patients attending the Victorian HIV/AIDS Service between 1984 and 2000 and examined whether antiretroviral therapy use or mortality was influenced by MHD. It was hypothesized that HIV-positive individuals with MHD would have poorer treatment outcomes, reduced responses to highly active antiretroviral therapy (HAART) and increased mortality compared with those without MHD. The MHD was diagnosed prior to HIV in 33%, and of those diagnosed after HIV, 93.8% were recorded more than 1 year after the HIV diagnosis. Schizophrenia was recorded in 6% of the population with MHD. Hospitalizations for both psychiatric and non-psychiatric illness were more frequent in those with MHD. The total number of anti-retroviral used was greater in those with MHD. When adjusted for antiretroviral treatment era, HIV exposure category, CD4 cell count and antiretroviral therapy, the survival was not affected by MHD. The MHD is frequent in this population with HIV infection and is associated with increased healthcare utilization but not with reduced survival.

Baingana, Alem and Jenkins (2006) conducted a study on mental health and the abuse of alcohol and controlled substances. Their study revealed that the mental disorders include depression, anxiety, schizophrenia and psychosocial and mental disorders as consequences of alcohol and substance abuse, conflicts and complex emergencies, the human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) and gender-based violence in addition to mental disorders of children. Standardized research instruments have been tested and widely used in Sub-Saharan Africa, and considerable attention has been paid to the transcultural
performance of these instruments. However, the challenges to epidemiological research still exist, including unreliable health facility records, non-inclusion of mental disorders in the health management information systems (HMISs) and lack of any disease surveillance system that includes mental disorders. This study in this way indicates that HIV/AIDS affects the mental status of a person, and as a consequence, the mental disorders may take place.

Nakimuli, Musisi, Mpungu and Katabira (2006) hypothesized that in majority of HIV-positive patients presenting with mania, the mania is secondary to HIV infection and its presentation and correlates differ from those of HIV-negative patients with primary mania. A comparative cross-sectional study was conducted with HIV-negative and HIV-positive patients admitted to psychiatric wards with acute mania. The authors compared the patients' psychiatric, physical and immunological (CD4 cell counts) and other laboratory parameters. Pair wise comparisons were done for two groups on a number of variables. Of 141 patients who presented with acute mania during a six months period and were eligible for the study, only 61 patients met criteria for HIV-related secondary mania. Compared with HIV-negative patients having primary mania, they were older, more cognitively impaired, less educated and more likely to be female. The patients in this group had more manic symptoms, i.e., they were more irritable, more aggressive and more talkative and had higher rates of paranoid delusions, visual hallucinations and auditory hallucinations. More of the HIV-positive secondary mania group had CD4 counts below 350 cells per cubic millimeter. The primary mania and HIV-related secondary mania were clinically and immunologically distinct. The relation between secondary mania and depressed CD4 counts suggests that in the setting of HIV/AIDS epidemic in poor countries, the secondary mania may be used as an indicator to initiate highly active antiretroviral therapy.

Scharko (2006) reviewed related to psychiatric disorders that result in poor quality of life, HIV disease progression, poor compliance and increased mortality in HIV infected adults. The same may be true for children and adolescents challenged with HIV/AIDS. The literature regarding the prevalence of Diagnostic Statistical Manual of American Psychiatric association (DSM) Psychiatric disorder in pediatric
patients with HIV/AIDS was also reviewed. Of over 500 papers reviewed, only eight attempted to quantify prevalence in some way. The average prevalence of 28.6% for attention deficit hyperactivity disorder, 24.3% for anxiety disorder and 25% for depression were found with respective risk ratio of 6.0, 3.8 and 7.1. However, the sample size was small and only two of the eight studies were controlled. Surprisingly, little work has been done to describe and quantify what mental health problems the HIV positive children and adolescents face.

Murphy, Greenwell, Mouttapa, Brecht and Schuster (2006) conducted a longitudinal study on psychological well-being of 81 young children (mean age = 8.8 years) living with AIDS/HIV-infected mothers having symptomatic disease. The relationship between mothers' physical health and children's psychological well-being was investigated. The children were assessed at seven time points over approximately 6 years. Individual growth models were estimated for children's depression, anxiety and aggressiveness in relation to mothers' viral load (medical records) and physical functioning, number of HIV-related physical symptoms and medical visits due to illness (self-report). The results showed significant linear declines in children's depression, anxiety and aggressiveness over time. Lower levels of physical functioning and more-physical symptoms among mothers were associated with higher levels of children's depression, anxiety and aggressiveness at baseline. Lower levels of physical functioning and more-physical symptoms among mothers were associated with initially high but rapidly decreasing levels of depression among children. However, the mothers who began the study in better health appear to have changed in health more quickly than mothers who began the study in poorer health. Thus, stability in mothers' health appears to be associated with a more rapid improvement in children's mental health over time. It shows that not only mothers' health even their children mental health is influenced by HIV and AIDS. The present findings suggest that the measures representing observable levels of and changes in mothers' health that are most likely to be directly experienced by themselves, and their children are the measures that are most predictive of changes in children's mental health over time.

Douaihy, Stowell, Kohnen, Stoklosa and Breitbart (2007) studied the high prevalence, underassessment and undertreatment of pain throughout the course of
HIV disease making understanding the barriers and inequalities in HIV/AIDS-related pain care essential. There is a tremendous need for integrated implementation of pharmacological and psychosocial interventions. The part 2 of this review aims to discuss mood, anxiety and substance abuse assessments, barriers to care and psychiatric treatments in the context of HIV-AIDS-related pain. The results highlighted the need for an interdisciplinary comprehensive approach to manage pain in HIV disease. It clearly shows that HIV/AIDS related pain conditions lead to psychological disturbances. Hence, further research is needed to examine the relationship between pain and psychiatric issues in order to formulate effective treatment strategies.

Nair and Malhotra (2007) examined specific coping strategies in cohort of HIV positive people. The objective of the study was to see which coping strategy dominates in the target group. HIV positive people from community care centre, network of positive people, drop in centre, informal groups etc. were taken. Self selected sample was initially restricted to 100 subjects in the reproductive age group of 15 to 49 years. However, as the study progressed sample was managed to 247 HIV positive persons of same age group. For measurement of coping Brief Cope Scale by Carver, 1997 was used. It was found that people diagnosed with HIV infection used a mix of problem focused coping and emotion focused coping: this expectance was the most commonly used and humor was the least used coping strategy.

Owe-Larsson, Sall, Salamon and Allgulander (2009) stated that the patients with HIV infection are at increased risk of psychiatric illness. The major depressive disorder and subsyndromal depressive symptoms as well as anxiety disorder and substance abuse are more prevalent among the HIV infected individuals than the general population. HIV-associated neuro-cognitive disorders (HAND) are common among HIV patients, and HIV-associated dementia (HAD) is a serious condition during the AIDS stage of HIV disease. Secondary mania and psychosis might be the first clinical symptom of HIV dementia. The introduction of HAART has resulted in significant decrease in morbidity and mortality for HIV infected patients. Highly active anti-retroviral therapy has also decreased the incidence of HIV-associated dementia but does not give complete protection against this condition. The utility of
psychotropic medications in HIV patients has not yet been studied sufficiently as a basis for guidelines. Psychiatric illness is common in HIV infected individuals and underlines the importance for screening not only for cognitive impairment but also for comorbid mental disease in HIV-positive patients. Hence, a better understanding of pathogenesis of HAD is essential to identify the additional therapeutic strategies for prevention and treatment of this neurodegenerative disease. Mania and psychosis secondary to HIV-associated dementia may be used as an indicator to initiate HAART, irrespective of CD4 count.

Musisi and Kinyanda (2009) investigated the emotional and behavioral problems of HIV sero-positive adolescents. Eighty-two HIV sero-positive adolescents were consecutively enrolled for the study. Over half (55.6%) of the subjects were females. They were mostly (88.9%) under the age of 15 years, orphans (97.6%) and stayed with non-parental relatives (68.3%). Almost two-third (60.9%) of them was in the HIV/AIDS clinical disease stage III or IV and was not on ARVs drugs. Forty-two (51.2%) of the subjects had significant psychological distress (SRQ-25 scores ≥ 6) and 14 (17.1%) had attempted suicide within the last 12 months. Their specific psychiatric disorders made using ICD-10 criteria were anxiety (45.6%), depression (40.8%), somatisation (18.0%), seizures (8.4%), mania (1.2%) and HIV-associated progressive encephalopathy (4.8%). HIV or AIDS infection in adolescence was associated with considerable psychological problems and the presence of major psychiatric disorders. With the current increasing availability of effective antiretroviral therapy, many of these children are surviving into adolescence, thus, calling for the development of adolescent friendly HIV medical and psychological support and treatment services in developing countries such as Uganda.

Myers, Sumner, Ullman, Loeb, Carmona and Wyatt (2009) estimated the relative contributions of trauma, chronic stress burden, depression, anxiety, social support and social undermining in predicting alcohol and drug abuse, and whether ethnicity moderated these relationships. A multi-ethnic sample of 288 HIV-positive and HIV-negative women was recruited. Multiple group path analysis indicated that greater drug dependence was associated with being HIV+, more depression and higher chronic burden. Trauma was related only to anxiety. Greater alcohol
dependence was also associated with more depression and more social undermining, and these effects were moderated by ethnicity. African-American and Latina women evidenced different relationships among depression, social support and social undermining. Depression, social support and social undermining served as intervening variables in influencing the relationships among the other psychosocial variables and drug and alcohol dependence.

Peng, Lee, Morisky, Yeh, Farabee, Lan, Chen and Lyu (2010) conducted the study to explore prevalence and correlates of psychiatric morbidity among HIV-infected male prisoners because the sero-incidence of HIV in Taiwan has drastically increased since 2004, particularly among injection drug users and prisoners. In 2006, the data were collected from all of HIV-infected male prisoners (n= 535) in seven prisons in Taiwan. This collection was performed by using self-administered anonymous questionnaire in-group settings directed by interviewers. The Psychiatric morbidity was measured using the five items Brief Symptom Rating Scale in 535 participants, who represented 85% response rate. After excluding incomplete data, 479 participants were included in the analysis. The Psychiatric morbidity was present in 46% of the participants. Multivariate logistic regression revealed that the correlates of five items Brief Symptom Rating Scale defined cases included the followings, i.e., being a recidivist, having poor self-rated health status and having experienced psychiatric symptoms in one's lifetime (e.g., significant physical pain or discomfort, depression for 2 weeks or longer, serious anxiety or tension, trouble understanding, concentrating or remembering and serious thoughts of suicide), with a Nagelkerke $R^2$ equal to 0.365. It concludes that Psychiatric morbidity is prevalent among HIV-infected male prisoners. The tailored HIV/AIDS education related to mental health is therefore suggested for inclusion as part of a comprehensive HIV/AIDS training program among incarcerated populations.

Sorsdahl, Mall, Stein and Joska (2010) stated that the psychiatric disorders are more common in people living with HIV/AIDS (PLWHA) than in the general population and they exert a significant effect on many health-related outcomes. Low levels of mental health literacy and stigma may contribute to delayed treatment seeking and poorer outcomes. A convenience sample of 400 HIV-positive
respondents was selected from three health clinics in Cape Town. The respondents' mental health literacy and attitudes towards psychiatric disorders were investigated. Psychiatric disorders 70-91% of the time were viewed as stress-related. Seeking help from a medical professional was often endorsed as an effective treatment option, while taking medication was rarely endorsed. The respondents held negative attitudes towards people with psychiatric disorders. In particular, the people with substance abuse and PTSD were stigmatized more than those who were suffering from depression and schizophrenia. The understanding of psychobiological nature of psychiatric disorders and of existing effective treatments in PLWHA in South Africa is limited. Interventions designed to increase mental health literacy and to reduce the stigma associated with psychiatric disorders may increase the likelihood of PLWHA seeking treatment.

Gonzalez, Zvolensky, Solomon and Miller (2010) explored facets of anxiety sensitivity (AS-social, physical and mental concerns) with regard to somatization, anxiety and depression symptoms among people infected with HIV/AIDS. Significant relation was noticed for AS-physical concerns and somatization symptoms (Beta= 0.52; p= 0.007) and AS-mental concerns and anxiety symptoms (Beta= 0.29; p< 0.05), controlling for negative affectivity, gender and shared variance with other AS subscales. Together, AS subscales were significantly related to depression symptoms (Delta R(2)= 0.11; p= 0.006) but none subscale was independently related.

Gonzalez, Zvolensky and Grover (2012) conducted a study on the role of anxiety sensitivity and mindful-attention in anxiety and worry about bodily sensations among adults living with HIV/AIDS. The study examined the cognitive factors that may be relevant to understanding anxiety and worry about bodily sensations among an HIV/AIDS population. Specifically, this investigation tested the main and interactive effects of anxiety sensitivity and mindful attention on anxious arousal, bodily vigilance, interoceptive fear and HIV symptom distress among 164 adults with HIV/AIDS. The results indicated that anxiety sensitivity was positively related to anxious arousal, bodily vigilance and interoceptive fear but not the HIV symptom distress. The mindful attention was negatively related to anxious arousal, interoceptive fear and HIV symptom distress but not the bodily vigilance. These main
effects for anxiety sensitivity and mindful attention were evident after controlling for disease stage, years with HIV and demographic variables. There were no interactive effects between anxiety sensitivity and mindful attention.

Gonzalez, Zvolensky, Parent, Grover and Hickey (2012) studied the HIV symptom distress and anxiety sensitivity in relation to panic, social anxiety and depression symptoms among HIV-positive adults. The current investigation sought to test the main and interactive effects of HIV symptom distress and anxiety sensitivity in relation to symptoms of panic disorder (PD), social anxiety disorder (SA) and depression among people with HIV/AIDS. The participants were 164 adults with HIV/AIDS (17.1% women with mean age 48.40 years) recruited from AIDS service organizations (ASOs) in Vermont/New Hampshire and New York City. The sample identified as 40.9% White/Caucasian, 31.1% Blacks, 22.0% Hispanic and 6.1% mixed/other with more than half (56.7%) reporting an annual income ≤ $10,000. Both men and women reported unprotected sex with men as the primary route of HIV transmission (64.4 and 50%, respectively). The HIV symptom distress and anxiety sensitivity (AS) were significantly and positively related to PD, SA and depression symptoms. As predicted, there was a significant interaction between HIV symptom distress and anxiety sensitivity in terms of PD and SA symptoms but not depressive symptoms. The results suggest that anxiety sensitivity and HIV symptom distress are clinically relevant factors to consider in terms of anxiety and depression among people living with HIV/AIDS. It may be important to evaluate these factors among patients with HIV/AIDS to identify individuals who may be at a particularly high risk for anxiety and depression problems.

Shuter, Bernstein and Moadel (2012) conducted a study to measure the biopsychosocial domains related to tobacco use in persons living with HIV/AIDS (PLWHAs). A cross-sectional interview study was done on 60 PLWHA smokers randomly selected from an HIV clinic. The participants averaged 14.4 cigarettes daily. Sixty-five percent were moderately or highly nicotine dependent, and most were motivated to quit. The substance use and depression were very common. Most of the researchers reported that smoking helped them to cope with depression, anxiety and anger. Twenty-seven percent thought (mistakenly) that smoking raised their T-cell
counts and/or helped to fight infections. Referrals to quit lines or cessation programs were uncommon. The study shows that smoking among PLWHAs is a challenging problem requiring targeted intervention strategies.

Mall, Sorsdahl, Swartz and Joska (2012) examined the mental health of people living with HIV/AIDS. The research conducted in South Africa and other parts of the world has revealed that people living with HIV/AIDS (PLWHA) are more at risk of developing a mental disorder than the general population. It makes sense to explore means of integrating HIV/AIDS and mental health care thereby facilitating access of PLWHA to prompt mental health care. The qualitative interviews were conducted with 22 HIV/AIDS service providers of three occupational categories, i.e., 10 nurses, six adherence counselors and six patient advocates, at three primary health care clinics in the Western Cape, South Africa. The issues of knowledge and practice in mental health care as well as the role of nurses and lay health workers were explored for providing mental health care to PLWHA thereby attempting to integrate mental health and HIV/AIDS care. Though majority of participants were in favour of mental health screening for PLWHA, they lacked confidence to conduct the screening themselves. Most participants displayed poor knowledge of mental disorders and reported that they referred to colleagues or to an external mental health service if they suspected a possible mental disorder in a patient. Integration of mental health and HIV/AIDS care has potential benefit to the public HIV/AIDS care system. Mental health training should be provided to HIV/AIDS service providers in this regard.

Studies Related to Gender Differences in Psychopathology amongst HIV/AIDS patients
Porche and Willis (2006) considered that the gender disparity exists in the incidence of HIV/AIDS in men, with men experiencing the largest burden of this epidemic. In addition, over six million men in the United States experience depressive disorders. HIV-infected men experience the three most common depressive disorders, i.e., major depression, dysthymia and bipolar disorder. Comorbidity associated with the dual diagnosis of HIV infection and common depressive disorders in men is a critical men's health issue.

Murray, Haworth, Semrau, Singh, Aldrovandi, Sinkala, Thea and Bolton (2006) investigated the association between the violence and abuse among HIV infected
women and their children in Zambia and found that HIV and violence are two major public health problems increasingly shown to be connected and relevant to international mental health issues and HIV-related services. Qualitative research was important due to the dearth of literature on this association in developing countries, cultural influences on mental health syndromes and presentation and the sensitive nature of tropic. The study sought to investigate the mental health on issues on HIV-affected population of women and children in Lusaka, Zambia though systematic qualitative study. Two qualitative methods resulted in identification of three major problems for women, i.e., domestic violence (DV), depression like syndrome and alcohol abuse and children defilement, DV and behavioural problems. Domestic violence and sexual abuse were found closely linked to HIV and alcohol abuse. This study shows the local perspective of overlap between violence and HIV.

Studies Related to Coping Strategies and Psychopathology amongst HIV/AIDS patients

Hays, Turner and Coates (1992) examined the impact of social support and HIV related conditions on depression among 508 gay men participating in the San Francisco Men's Health Study - a population-based prospective study of single men aged 25-54 years. The number of HIV-related symptoms experienced significantly predicted depression cross-sectional and one year later. Satisfaction with each of the three types of social support (emotional, practical and informational) was inversely correlated with depression. The men who were more satisfied with the social support they received were less likely to show increased depression one year later. The degree of satisfaction with informational support appeared especially critical in buffering the stress associated with experiencing HIV symptoms. These findings offer valuable insight in understanding the psychological needs of gay men confronting the AIDS crisis and have important practical implications for designing mental health services to meet those needs.

Thomson, Jones, McClure and Brantley (1996) investigated the impact of stress, social support, coping and mood on HIV disease status to provide support for a biopsychosocial model of HIV, thereby creating a broader understanding of the relations, among psychosocial co-factors and HIV illness. A heterogeneous sample of 100 HIV-positive subjects having age 18-54 years participated in the study. The
subjects were assessed for social readjustment, weekly stress, interpersonal support, coping strategies, depression, anxiety, HIV symptoms and T-cell count (CD4). Mood and coping demonstrated the strongest association with HIV symptomatology, and increased anxiety and depression were associated found with HIV symptoms counts. The results validated a theoretically driven model illustrating interrelations among psychosocial co-factors and HIV.

Kaplan, Marks and Mertens (1997) examined distress and coping among women with HIV-infection. A multiethnic sample of 53 women with HIV/AIDS and reported nearly 40% clinically significant levels of depressive symptomatology and anxiety. Compared to a non-patient norm, the distress levels were higher among the Latina, African-American and White subjects who made up to HIV sample. Prayer and rediscovery of self were their most frequent coping responses, suggesting that clinicians working with HIV/AIDS did not overlook the importance of spiritual faith and practices in adapting to HIV infection.

Pedersen and Elklit (1998) examined the degree of traumatization, defence styles, coping strategies, symptomatology and social support in a sample of 19 HIV-positive men and women in an effort to ascertain the symptomatology implications of living with HIV. Traumatizationly and the potentially mediating effects of defence styles have only been the subjects of few HIV positives studies. The study was based on socio-demographic questionnaire, the impact of event scale, the defence style questionnaire, the coping styles questionnaire, the trauma symptom checklist and the crisis support scale. A degree of traumatization that warrants treatment was found together with an association between particular coping strategies and symptomatology and particular defence styles and symptomatology, respectively. Social support had increased over time, which was contrary to other research findings on social support.

Ball, Tannenbaum and Armistead (2000) investigated that HIV is affecting African-American women at alarming rates. Many of these women are poor and socially disadvantaged, resulting in a combination of stressors that affect the quality of their lives. This study investigated whether coping style, i.e., problem-focussed, emotion-focussed, varies as a function of HIV status or stage of HIV-related illness.
Secondly, they examined whether the use of a particular style is associated with three areas of functioning, i.e., (i) general psychological distress, (ii) depressive symptomatology and (iii) physical symptomatology, among HIV-infected women. Ninety-nine HIV-infected women and 143 non-infected women completed measures assessing coping styles and functioning. No significant differences emerged in coping styles between the HIV-infected and non-infected women or for the groups when symptomatic women were examined separate from asymptomatic women. Greater emotion-focussed coping was associated with less general psychological distress and depression specifically. The problem-focussed coping interacted with illness stage to predict all areas of functioning. By identifying effective coping strategies among African-American women with HIV, the mental health professionals can design empirical interventions that can help in improving the quality of life for these women.

Suarez and Rees (2000) examined the relationship between complementary and alternative medicine (CAM) use, stress appraisals and adjustment to disease. The HIV positive 127 individuals with age 16-61 years completed measures assessing stress appraisals, coping, psychological adjustment, satisfaction with life and immune functioning. Various demographic measures were also completed. The results indicate that the adaptive primary stress appraisals varied positively with CAM use, suggesting that those who used these treatments perceived their disease as more controllable and less stressful. It was concluded that CAM might have the potential for significantly reducing the distress associated with chronic illness and may potentially slow down the disease progression and sustain health.

Heckman, Kochman, Sikkema, Kalichman, Masten and Goodkin (2000) examined the race differences in stressor burden, ways of coping, social support and psychological distress among late middle-aged and older men living with HIV/AIDS. Self-administered surveys were completed by 72 men (mean age 53.4 years) living with HIV/AIDS in New York City and Milwaukee, WI. The older African-American and white men experienced comparable levels of stress associated with AIDS-related discrimination, AIDS-related bereavement, financial dilemmas, lack of information and support, relationship difficulties and domestic problems. However, in responses to these stressors, the older African-American men more frequently engaged in
adaptive coping strategies, such as greater positive reappraisal and a stronger resolve that their future would be better. Compared to their African-American counterparts, the HIV-infected older white men reported elevated levels of depression, anxiety, interpersonal hostility and somatization. African-American men also received more support from family members and were less likely to disclose their HIV serostatus to close friends. As AIDS becomes more common among older adults, mental health-interventions will increasingly be needed for this group. The development of intervention programs for this group should pay close attention to race-related differences in sociodemographic, psychosocial and behavioral characteristics.

Penedo, Frank, Antoni, Michael, Schneiderman, Neil, Irosson and Gail (2001) investigated dysfunctional attitudes, coping and depression among HIV-seropositive men. The elevated level of psychological distress has been documented among HIV Sero-positive (HIV positive) symptomatic men, who have sex with men (MSM). However, very little is known about the role of dysfunctional attitude and coping strategies in maintaining an Amelia rating distress level in ways what can inform those developing psychological interventions for HIV positive persons. This study evaluated the relations between dysfunctional attitudes and depression and examined the role of coping as a mediator of this relationship among 115 (19-49 years old) HIV positive symptomatic MSM. The higher dysfunctional attitude scale scores were associated with more reported depressive symptoms. The use of adaptive coping strategies such as active coping was associated with lower depression, whereas, the use of maladaptive strategies such as denial was related to mediate the relationship between dysfunctional attitudes and distress. The findings suggested that the investigations aiming at reducing psychological distress in this population using cognitive restructuring and related techniques may achieve their effects by enhancing adaptive coping strategies on the one hand and reducing maladaptive strategies on the other hand.

Molassiotis and Maneesakorn (2004) assessed anxiety depression, coping and quality of life and their inter-relationships in a sample of Thai people living with HIV or AIDS in northern Thailand using a cross-sectional design. Eighty-eight
symptomatic people living with AIDS completed the standardized scales and open-ended questions. The anxiety was detected in 8.14% of the sample, with an additional 29.1% and classified as *doubtful cases*, needing further assessment to establish a psychiatric diagnosis. The depression accounted for 12% of the samples with an additional 14.5% was classified as *double cases*. The subjects used emotion-focussed coping strategies more often, with most frequent one that of positive reappraisal. The quality of life was moderate with lowest scores in the emotional well being subscale. Meditation (an emotion focussed coping method) was related with better quality of life, the effects of life scores. The results indicated that the more emotional support community care of complementary therapies and family support could benefit the people living with AIDS in Thailand and improve their quality of life. Uldall, Palmer, Whetten and Mellins (2004) examined the adherence in people living with HIV/AIDS, mental illness and chemical dependency. Their study revealed that antiretroviral was central to reducing morbidity and mortality among people living with HIV/AIDS. Relatively few studies published to date have addressed HIV adherence among special populations.

Bien (2005) described the intricate challenges of bringing mental health services to isolate and guard urban HIV-positive Native Americans suffering from chronic trauma-related illnesses and imbalances, depression, anxiety, substance abuse, thought disorders and trauma-based characterological disorders. He explored the integration of art therapy, Bowen Family Systems Therapy and in-home therapy in the Family and Child Guidance Clinic's attempt to provide support to a population that has profound distrust for *services and treatment* and no historical context for psychotherapy. Changing the paradigm of thought is essential to providing services that respect culture and history as well as addressing current presenting issues. Art therapy and in-home therapy support those community members who are flooded emotionally but have difficulty in speaking about their internal processes. It shows that support system is very important for the persons who are suffering from a life threatening condition like AIDS.

Gore-Felton, Koopman, Spiegel, Vosvick, Brondino and Winningham (2006) examined the effect of maladaptive coping strategies and psychological quality of life
on depression at two time points in a diverse sample of persons living with HIV/AIDS (N= 85). The use of maladaptive coping strategies to deal with the stress of living with HIV/AIDS, particularly engaging in various kinds of avoidant behaviors, was significantly associated with greater depression at baseline and increased depression at three months. QOL was the single most important predictor of depression.

Kemppainen, Eller, Bunch, Hamilton, Dole, Holzemer, Kirksey, Nicholas, Corless, Coleman, Nokes, Reynolds, Sefcik, Wantland and Tsai (2006) examined the frequency and effectiveness of commonly used strategies for self-management of anxiety in a sample of 502 participants from Norway, Taiwan and the United States. An activities checklist was summarized into five categories of self-care behaviours including activities/thoughts, exercise, medications, complementary therapies and substance use determined self-care behaviours. Ratings of frequency and effectiveness for each self-care activity were also included. Praying received the highest overall rating of effectiveness of any self-management strategies (8.10 in a scale from 1 to 10), followed by meditation (7.37), exercising (7.32), using relaxation techniques (7.22), cooking (6.98) and walking (6.90). An analysis of effectiveness scores for each self-care strategy by country reflected a wide variation. The three most effective anxiety self-care strategies reported by participants included exercise (7.31), walking (6.96) and reading (6.44). The highest ratings of effectiveness by participants from Taiwan included talking with others infected with HIV (6.0), attending support groups (6.0) and exercising (6.0). The United States participants allocated the highest ratings of effectiveness to complementary or alternative therapies, including praying (8.10), meditating (7.43) and using relaxation techniques (7.35). Regardless of the country, watching television and talking with family and friends were the two most frequently reported strategies. These strategies for self-management of HIV-related anxiety are vital for clinicians to be aware of in the care of HIV/AIDS infected persons.

Shanthi, Damodharan and Priya (2007) evaluated the level of depression and coping pattern in HIV positive patients. Fifty-one newly diagnosed HIV patients (M= 34 and F= 17) were selected for the study from HIV Clinic, SRU. Hamilton Depression Rating Scale and Ways of Coping were used to evaluate the levels of
depression and to identify their different coping styles. Descriptive and Inferential statistics were used to analyze data. Statistical analysis based on ANOVA indicated no significant difference in the level of depression in relation to gender, and mean scores revealed severe level of depression in all patients included in this study. Among the 8 types of coping, there was significant difference in confrontative coping, seeking social support, accepting responsibility (p < 0.001), escape, avoidance and self control (p < 0.005) in relation to gender, where men tend to escape or avoid circumstances, whereas, the women sought more social support. Discussion, i.e., retro-positive patients had severe depression. Women faced lot of conflicts, as they were more responsible in maintaining relationships in the family, whereas, men denied or they felt guilty of their illness or high-risk behaviour and were more concerned about financial issues. It is evident that their coping styles were maladaptive in nature. Men escaped from problem situations and tried to control the situation or people around them. They also tried to detach and maintain distance from stressors. Women sought support from others in the family or society and they avoided or detached conflicting situations too. It is evident that both men and women did not try to cope by accepting responsibility, planning and solving problems through positive reappraisal for improving or maintaining their personal growth.

The above studies indicate that the studies on coping do not reveal the type of coping adopted by HIV and AIDS patients, although the impact of coping strategies on daily life has been studied. Similarly, the accompanied psychopathology has been studied but the relationship between coping and psychopathology is missing.