HIV/AIDS and associated Occupational stress: A Study in Andhra Pradesh

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CERTIFICATE

It is certified that the dissertation titled 'HIV/AIDS and associated occupational stress: A study in Andhra Pradesh' is a bonafide record of original research work undertaken by Dr. Sony Shah in partial fulfillment of the requirement for the award of the degree of Master of Public Health under my guidance and supervision.

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DECLARATION

I hereby declare that this dissertation work titled *"HIV/AIDS and associated occupational stress:A study in Andhra Pradesh"* is the result of original research and it has not been submitted for the award of any degree in any other institution.

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Abstract

HIV/AIDS and associated Occupational Stress: A study in Andhra Pradesh.

Objective:

The study aimed to determine the level and factors contributing to the occupational stress among the health care workers of HIV/AIDS in the government settings across Andhra Pradesh.

Methods:

A quantitative cross sectional survey was conducted among the 308 health care workers of HIV/AIDS care delivery . A self administered, structured questionnaire was administered after the informed consent from the participants. The 22-item Maslach Burnout Inventory(MBI) was used to measure emotional exhaustion, depersonalization and personal accomplishment. AIDS Stress Scale (ASS) was used to address the component of HIV/AIDS in the study. Factors pertaining to the socio-demographic and work characteristics were also included in the questionnaire.

Results:

Overall 38% of the respondents showed moderate to high levels of burnout in MBI. In the domains, 32.4% showed high emotional exhaustion, 40.7% showed high Depersonalization and 33% showed low personal accomplishment. The mean score of ASS was 2.08 with SD of 0.45 and showed significant correlations with Depersonalization and Personal Accomplishment. Female sex, reason for getting into job and social ostracism were associated with Emotional Exhaustion, again reason for getting into job, working for only OPD or IPD and job specific training were predictors for Depersonalization and nature of employment, job specific training and ASS score were predictors for low personal accomplishment.

Conclusion:

There is a significant levels of stress among the health care workers of HIV/AIDS in Andhra Pradesh. Stress reported was associated with modifiable factors like socio-demographical and work related factors. The study emphasizes the need to address the factors and issues related to staff stress.

Chapter I

Introduction and Literature review

1.1 Introduction

Stress: Olson et al (1989) defined stress as –"a state of tension that arises from an actual or perceived demand that calls for an adjustment or adaptive behavior".[1] According to Lazarus (2006), The word "stress" was first used in a non technical sense in 14th century to refer hardship, straits, adversity or affliction. Late 17th century formulated an engineering analysis of stress on three basic concepts, load, stress and strain. This analysis influenced the 20th century model of stress which drew the idea of load as an external force exerted on a social, psychological or physiological system. Load is analogous to external stress stimulus, and strain is analogous to stress response. With time the basic concept of stress were relabeled and used differently . Physiologist prefer still use the term "strain" and sociologist prefer to use the term "stress".[2]

Occupational Stress: Occupation related stress is the response people have when presented with work demands and pressures that are not matched to their knowledge and abilities and which challenge their ability to cope.[3] National Institute for Occupational Safety and Health (NIOSH, USA) defines occupational stress as "the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker".[4]

Workers who are stressed are most likely to be unhealthy, poorly motivated, less productive and less safe at work. [3]

World's concern on occupational stress was manifested in the United Nations report (1992) where it is described as " the 20th Century Disease" .A few years later in 1996, World Health Organization (WHO) termed it as a " world wide epidemic" [4] . The mention of addressing occupational stress at global level in the report presented by Thirteenth Session of the Joint ILO/WHO Committee on Occupational Health, signifies that occupational stress is still an issue of concern.[5]

Occupational groups like policemen, prison officers, miners, doctors, nurses, teachers and journalists have been considered among the most stressful by International labour organization (ILO). [6]

1.2 The problem statement.

The emergence of HIV/AIDS has changed the facets of health care delivery. It has become a pandemic, killing huge number of people. UNAID- AIDS Epidemic Update 2009, has shown that 34.4 million people were living with the disease worldwide and that AIDS killed an estimated 2.1 million people till 2008. So, this amounts to rise of work burden among the health care providers of HIV/AIDS. Significant body of research, examining the impact on health care workers who work with HIV/AIDS patients, has developed in last 20 years, since the emergence of disease. AIDS care has presented unique challenges at different points during the epidemic for health care workers and it is said that in the era of extended survival of the people with HIV/AIDS, the health care workers are vulnerable to burnout. [15]

India bears a significant burden of HIV/AIDS of the world contributing to 0.34% of world prevalence of HIV/AIDS.[14] Among the twenty three states of India, Six are considered high prevalent states with prevalence of HIV/AIDS greater than one percent. Andhra Pradesh, the fifth most populous state of the country is also one of them. The others are Tamilnadu, Maharashtra, Karnataka, Nagaland and Manipur.[57] As a response to concentrated epidemic of HIV/AIDS, there has been increased demand of health care services[9] and also the number of centers providing care like ART centers, ICT centers and community care centers across these states. With reference to Andhra Pradesh, presently there are 1121 ICTCs, 23 ART centers and 45 NACO supported community care centers.[58,59,60]

This necessities the need to understand the patterns and levels of stress of all employees working across the settings, i.e ART Centers, ICTC and CCC

1.3 Review of Literature

1.3.1 Epidemiology of The Human Immunodeficiency Virus/Acquired Immunodeficiency syndrome (HIV/AIDS)

The Human Immunodeficiency virus (HIV) infection is a global pandemic causing disease and death nearly every country in the world. WHO 2008 data says that there are around 33.4 million people living with HIV and around 2.7 million new infections every year.[12]

The epidemiological dynamics of HIV infection are different from other infectious disease agents, including other sexually transmitted infections (STI) .With the exception of HIV transmission from mother to child and via infected blood/blood products, tissues or organs, all other HIV transmission occurs only as a result of those human behavior(s) that place an individual at risk of acquiring an HIV infection. The primary risk behaviors that place a person at significant risk of acquiring or transmitting an HIV infection include the sharing of drug injecting equipment and/or having unprotected sexual intercourse with multiple sex partners. Only those persons who are involved in some HIV-risk behavior(s) or whose sex partner is involved in some HIV-risk behavior(s) are at any risk of acquiring an HIV infection via sexual intercourse. [12]

According to WHO report (2001),the patterns and prevalence of the major HIV-risk behaviors in Asia are different from other major geographic regions of the world. In sub-Saharan Africa, the predominant mode (over 95%) of HIV transmission in the sexually active

population is via heterosexual intercourse. In .Western. Countries, MSM and IDU groups continue to be the most prominent risk behavior group involved in HIV transmission. In Asia, IDU, as well as FSW and their clients, are the most prominent risk behavior group involved in HIV transmission. [13]

1.3.2 Indian Scenario

India continues to be in the category of concentrated epidemic. NACO report 2008 estimates to have 1.8-2.9 million HIV positive persons, with an estimated adult HIV prevalence of 0.34%. It is also said that the infection among the high risk groups is very high compared to the general population. [14]

The National AIDS control Programme (NACP) was initiated in 1992 and has completed 2 phases. Now in the third phase with the goal to halt and reverse the epidemic in India over 5 years, has been working on four pronged strategy, [14]

1. *Prevention of new infections in high risk groups and general population through:*
    a. *Saturation of coverage of high risk groups with targeted interventions (TIs)*
    b. *Scaled up interventions in the general population*
2. *Providing greater care, support and treatment to larger number of persons living withHIV/AIDS (PLHA).*
3. *Strengthening the infrastructure, systems and human resources in prevention, care, support and treatment programmes at the district, state and national level.*
4. *Strengthening the nationwide Strategic Information Management System.*

The program has set up a network of Anti-retroviral Therapy(ART) and Community Care Centres (CCC) in medical colleges, district hospitals and non-profit charitable institutions with a mandate to provide counseling for drug adherence, nutritional needs, treatment support, referral and outreach for follow up, social support and legal services to PLHA(People Living with HIV/AIDS). The process of setting up a network of centers has shown a sharp increase in numbers from 2007 TO 2009.[14]

1.3.3 Professional stress and burnout and HIV/AIDS

With the complex nature of HIV/AIDS dynamics, the health care providers are often faced with multiple challenges when working with the individuals with the disease, which make them more vulnerable to occupational stress and burnout. Many health care professionals find working with these individuals to be both physically and emotionally difficult and that over time, can lead to the experience of occupational stress and burnout. [15] A study on psychological experience of professionals working in AIDS, found that respondents experienced more depression, anxiety, overwork and fear of death since starting to work with AIDS[9,16]

The following section will provide the review of burnout theory and existing literature on occupational stress and burnout with respect to health care professionals involved in HIV/AIDS care.

1.3.4. Burnout as a Type of Stress

Although originally exclusively related to social professions, burnout is nowadays commonly accepted as a stress state characterized by symptoms such as mental exhaustion and physical fatigue, detachment from work, diminished competence, loss of energy, increased irritability and sleep, and concentration problems which can occur irrespective of the type of profession.[17] Despite the growing consensus surrounding the concept of burnout, the distinction between burnout and stress has not been clearly delineated. It is suggested that burnout is, in fact, a type of stress-specifically, a chronic affective response pattern to stressful work conditions that features high levels of interpersonal contact.[18]

A unique stress phenomenon is described by the three components of burnout model suggested by Maslach. Emotional Exhaustion is a traditional stress variable. Depersonalization was not formerly a part of stress literature but appeared later. Finally, although feelings of Personal accomplishment (related to such concepts as self-efficacy) are familiar to the stress literature, the third component of burnout, a diminished level of this variable, adds the assertion that self-evaluations are central to the stress experience.[18]

1.3.5 Theory of burnout syndrome: A response to occupational stress

The term burnout was first described in the literature by Freudenberger in 1974, where he described it as a state of fatigue and frustration arising from unrealistic and excessive

demands on the personal resources of the health.[19] Around same time, Maslach was studying the ways in which people coped with emotional arousal on job. The original definition by Maslach and colleagues was "a syndrome of physical and emotional exhaustion, involving development of a negative self-concept, negative job attitudes, and loss of concern and positive feeling towards clients.[20] The definition was later modified to distinguish the three dimensions of burnout syndrome.[21]

The most adapted model proposed to describe the process or state of burnout, was Maslach and Jackson's attributional /environmental model of burnout, which focuses on burnout being result of relationship between individual and environmental factors. The model and the corresponding measure, *The Maslach Burnout Inventory(18).i*s the most widely used in burnout research.

According to Maslach and Jackson's[21] conceptualization, burnout is a Multidimensional process with three central constructs: emotional exhaustion, Depersonalization, and reduced personal accomplishment. Emotional exhaustion refers to feelings of being emotionally overextended and depleted of one's emotional resources by one's work. Depersonalization refers to a negative, callous, excessively detached or dehumanized response to other people, who are usually the recipients of one's services or care. Reduced personal accomplishment refers to feelings of incompetence, lack of

productivity and successful achievement in one's work, and negative self-worth. A high degree of burnout is represented by high emotional exhaustion, high depersonalization, and low personal accomplishment,[22,32]. Maslach and Jackson's burnout model depicts distinct predictors of burnout, which include both demands of work and the lack of various resources.[21] The model asserts that the development of depersonalization is related to the experience of emotional exhaustion (i.e., emotional exhaustion is seen as mediating the environment's relationships with depersonalization); thus, these two aspects of burnout are believed to be correlated .The third dimension of burnout, reduced personal accomplishment, is believed to be separate and independent of the two other burnout dimensions and may develop in parallel with emotional exhaustion.[20]

1.3.6 Consequences of burnout

Stress can have a number of deleterious effects on one's physical, psychological, social, and occupational functioning.[20] It has been found to relate to low worker morale, impaired work performance, reduced productivity, absenteeism, adverse interpersonal relations with clients, negative attitudes toward work/lower job satisfaction, high job turnover, lower quality of life, and poorer health and psychological well-being.[20] Usually the earlier signs include headache, sleep disturbance, stomach upset and difficulty in concentration. Later this leads to major diseases like cardiovascular diseases like cardiovascular diseases (stroke, myocardial infarction), mental health problems (depression). The behavioral symptoms are in form of loss of appetite, increase consumption of alcohol, drug, tobacco, isolation form others, poor job performance and change in close family relationships.[23]

Table 1.1. Symptoms of burnout[15]

Physical	**Behavioral**	**Cognitive/affective**
Physical exhaustion	Irritability	Emotional numbness
Chronic fatigue	Anger and resentment	Hypersensitivity
Headaches and back pain	Alienation	Cynicism
Gastrointestinal problems	Marital and relationship difficulties	Apathy
Sleep disturbance	Rigid thinking	Helplessness and hopelessness
Muscular tension	Self-righteousness	Depression
Vulnerability to illness	Increased alcohol or drug use	Overidentification with patients
Lingering illnesses		

1.3.7 . Burnout among the health care providers:

Health care workers are prone to overworking. Many factors contribute to this result, including professional school selection process and professional ethics that embraces hard work, excessive service demands and fiduciary obligations to patients which promote the interest of patients over physician self interest. Self- neglect appears to be more likely than not.[24] Many studies worldwide have suggested the significant levels of burnout among the health care workers across all specialties.[25,26,27,39]

A study on residents of medical post graduates program have shown the higher degree of burnout in at least one domain of MBI scales and were found to be associated with self reported sub optimal patient care practices.[27]

Studies also suggest that the suicide rates among the physicians is more than 40% higher than among men in general population, whereas that of female physician is a staggering 130% higher than among the women in general population. Burnout seems to be associated with the increased likelihood of subsequent suicidal ideation, where recovery from burnout is associated with less suicidal ideation.[28]

Most physicians struggle to find a balance between personal and professional lives. Extensive paper work, on-call hours, shift duties, and patients trespassing into the private lives of physicians leading to increase professional stress and burnout.[48]

The scenario is not very different in other health care workers (nurses, social workers). There has been reported high levels of turnover related to burnout specially emotional exhaustion in nurses.[29] It is reported that one out of every five hospitals nurses in a study in Japan intended to leave their current jobs within a year and their job dissatisfaction is 4 times greater than average for all US workers.[49]

The increased levels of job stress not only affect the professional but also the patients receiving care. Linda , suggested, that in hospitals with high patient-to-nurse ratios, surgical patients experience higher risk-adjusted 30 day mortality and failure to rescue rates and nurses are more likely to experience burnout and job satisfaction.[50]

1.3.8: Occupational stress and burnout in HIV/AIDS.

Many health care workers find that working with HIV/AIDS patients is both physically and emotionally demanding.[27,28] It has been suggested that HIV/AIDS health care professionals face unique demands that could make them more prone to experiencing burnout in comparison to professionals in other health care areas. [35]

Niven (1999), indicated 41%of respondents among the health care workers of HIV/AIDS in Scottish health Authority, found working with HIV/AIDS patients was one of the most stressful parts of their job and 14% responded that they are not comfortable with clients with HIV/AIDS.[52]

Accounts of negative emotional experiences were found dominant among the HIV/AIDS health care workers in a rural area of the Limpopo province. The emotional exhaustion was felt due with limited possibilities of personal accomplishment and recognition. It was also described that the interaction with patients were demanding and sometimes negative.[51]

A study in Africa, where an estimated one in every three to four patients admitted to some public hospitals is HIV-positive, it was found that the care providers battle with bereavement overload, over-identify with their patients, fear occupational exposure to HIV, and find it difficult to cope with their own and patient's stigmatization and confidentiality issue.[37]

Another study by Ross& Seeger found that 34% of health professional reported stress and 43% of health professionals reported overwork in their work with AIDS.[9]

A similar study in among the clinical staff of Luska public health sector in 2007, showed 51% of reported occupational burnout and was considered as the majoe factor of staff attrition.[31]

A study by Hayter(1999) on burnout among the nurses of HIV/AIDS care at community levels showed that 66% had moderate or high burnout on EE or PA of the MBI.[36]

The majority of studies to date have concentrated on physicians, nurses and volunteers [26,30,34,46] who provide medical care for the HIV positive and AIDS patients. However,HIV counselors, professionals who provide pre-test and post test counseling to the individuals who are tested for the antibody to the HIV virus, constitute of another important health care delivery group. These are the people who are often the first professional to inform patient of his/her HIV status. These frontline responsibilities are among the factors that contribute to the stressful nature of the profession of HIV counseling and thus leading to burnout and depression.[32]

1.3.9. Indian scenario on occupational stress and burnout in HIV/AIDS

There are studies in Indian setting those have looked in occupational stress and burnout among various vocational groups,[39,40,41,42] but very little attention has been paid to health care professionals.

A study among the physicians in Government hospital, Shimla had shown that Work over load is the most significant source or factor causing stress among them. Also male doctors were more stressed than female counterparts. [42]

Only one study from Bangalore could be cited from India which had attempted estimating prevalence of staff stress among the palliative care givers in HIV/AIDS in India. The study also emphasizes the need to address the issues related to staff burnout in HIV palliative care. The article also concluded showing high levels of stress among the study group.[9]

There has been recent study on estimation of work load among the various health care providers working in various work settings as per NACO guidelines. It showed that, in the high prevalence states like Tamil Nadu, Maharastra, Andhra Pradesh work burden exceeds more than 1000 clients per year per worker. The findings are significantly higher than the recommendations made by NACO.(40) The work load estimated is lower for nurses than for counselors and medical officers.[55]

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1.3.10. Factors associated with burnout

A number of factors have been identified to be associated in reducing or alleviating the experience of burnout in health care professionals in HIV/AIDS.

The reasons which make the health care providers more vulnerable are physical risk of acquiring disease[15] and fear and stigma and discrimination due to the disease.[15,44] The burden of needle stick

injuries also need to be taken heed of, as the noted sero-conversion rate was 0.36 percent.[45] This is a distinguishing feature of HIV/AIDS with the other similarly frustrating circumstance.

It is not surprising to find that health care workers who are depressed, anxious or emotionally unstable are more likely to experience burnout.[20,21] Furthermore, non supports from families and friends have also shown to contribute burnout. In another study, one quarter of respondents have reported that their relationship with their partners had suffered as a result of their work in HIV/AIDS.[15]

It is also stated that The HIV/AIDS patients are brought to hospital at an advanced stage of illness resulting in high inpatient death rates. The high death rates combined with the limited possibilities of effective care contributes highly to the professional frustration, higher absenteeism, burnout and low staff morale.[38] The difficult working conditions for health workers, low salaries and inadequate supplies in AIDS- stricken countries has also been sought as major causes of stress.[38,44]

According to Ross and Seeger, the major stressors were youth of the people with AIDS, neurological aspects of the illness and death. Stress had the highest correlation for burnout, followed by needing more information about emotional needs of people with AIDS.[9]

Care givers in one of the study in Africa, find themselves inadequately trained to offer HIV-related care and counseling; other predictors of burnout were largely due to non support from their employers.[37] Similar findings are suggested in a Scotland based study in

which,42% of health care workers felt that lacked sufficient knowledge to manage the cases of HIV/AIDS.[52]

Due to the chronic nature of the disease, the health care workers generally spent a considerable time serving the clients of HIV/AIDS. Links between the close involvement of practitioner with the clients, death of the clients were identified as the significant factors in AIDS care associated with burnout in population of community nurses in North England.[36] Also, Hayter points out the significance of lack of support and clinical supervision as a predictor for increased stress among the workers.[36]

Risk factors like having another job, knowing a co-worker who left for a better opportunity, knowing a co-worker who died of disease, fear of illnesses attributable to HIV infection were also found significantly associates with the burnout levels in the health care workers.[31]

The setting of care also influences highly on the levels of stress. A study done in Spain showed that there was no significant difference in psychological morbidity among the groups of health care providers working with HIV/AIDS in two different settings, Infectious Disease Units and a Hemophilia unit and comparison was done with those of professionals working in oncology. However exceptions were seen in care providers in Hemophilia showing less overall burnout; Infectious Disease group showed less personal accomplishment.[17]

However, the number of years of working with AIDS did not correlate with the psychological distress, in contrast to the percentage of total work time spent in AIDS unit was related to depression, and they suggested that burnout is the function of the amount of concentrated exposure rather than a longitudinal contact with the disease. [9,38]

1.4: Rational of study:

India carries a significant burden of HIV/AIDS; 0.34% of world prevalence. (11).The point here also to be noted is Indian health care delivery system has its own distinct features and associated factors like limited access, illiteracy, stigma and lack of proper social security system making things different in Indian scenario.

In the current scenario, there is a lack of data on prevalence of burnout syndrome in AIDS care givers in India. The data present has been obtained exclusively from the developed country and it is worth exploring the level of work related stress in Indian conditions. There may be possibility that the stress may actually be higher among Indian care givers than other countries due the poor working conditions in the country.

Furthermore, health care workers in general perception are never considered stresses. The findings of the proposed research may be useful to the policy makers and the donors of HIV/AIDS to deal with the problems of attrition

Andhra Pradesh being one of the high prevalent state attracting nation's attention as priority state was found to be the optimal study setting to find out the levels of stress among the health care providers of HIV/AIDS.(11)

1.5 : Research Questions:

- What is the level of stress experienced by HIV/AIDS care providers?
- What are the factors related to stress?
- What is the contribution of social support to the stress?

1.6: Objectives

- To study the levels of occupational stress among the health care providers of HIV/AIDS in the state of Andhra Pradesh.
- To find out the factors related to the occupational stress.

CHAPTER II

Methodology

This chapter describes the methodology followed for the study in detail. These include the conceptual framework, basic information about the study including operational definitions used in the study and the ethical consideration.

2.1 Conceptual framework:

The conceptual framework is adapted from the structural model of burnout as suggested by Maslach et al. [59] with the modifications required for the present study. The factors considered in the study are Socio-demographic factors, work related factor and social support.

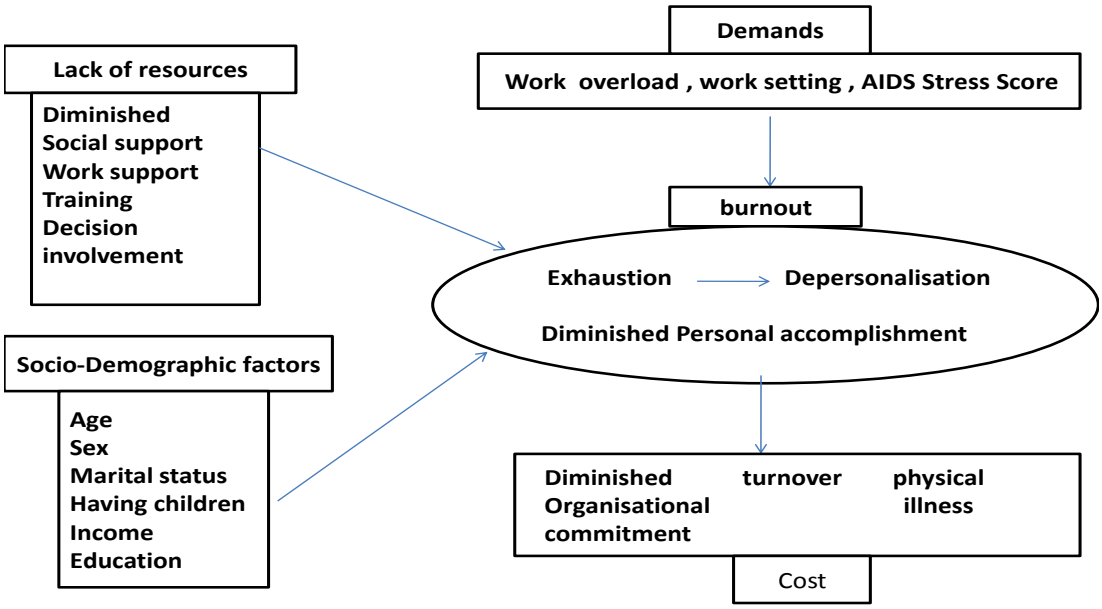

Fig. 2.1: Conceptual framework of the study

2.2 Study design:

The study used was a quantitative cross sectional survey.

Cross sectional survey design is appropriate for the study as the researcher planned to obtain data at one time point for both dependent and the predictor variables through the use of self reported questionnaire comprising of variables on demographic details, work details and burnout scale

The data collected would be expected to provide a snap shot of experience of stress among the health care workers and also allow some degree of generalization of results to the population of health care workers in the field of HIV/AIDS health care delivery.

However, on other hand the design limits the extent to which groups can be compared, as the participants in each sub group being studied (ie, doctors vs nurses vs counselors , rural vs urban) were not matched or randomly assigned. Therefore, the design does not allow making statements on the causality but it helps to identify the association between the dependent and the independent variable.

Also, it was important for the researcher to collect the data in time efficient manner to combat the time and budget limits.

2.3 Study setting:

The study was conducted among the Doctors, Nursing staff, counselors and lab technicians working in the Anti Retroviral therapy centers, Community Care Centers and Integrated counseling and testing centers of Andhra Pradesh. The state has 1121 ICTCs, 23 ART centers and 45 NACO supported community care centers .[55,56,57]

2.4 Sample frame

The sample frame consisted of the list of all 1189 centers. The list was obtained from the website of Andhra Pradesh State AIDS Control Society .[55,56,57] and the list was updated in March 2010. The list included the names of all the centers in Andhra Pradesh.

2.5 Study Population

The study population comprised of Doctors, Nursing staff Counselors and the lab technicians working in the area of HIV/AIDS health care delivery , which included ART Centers, ICTC and CCCs.

2.6 Inclusion and exclusion criteria.

.Inclusion criteria:

1. Health care providers working in ART centers, ICT centers and CCC.
2. Should be either doctor, counselor , nursing staff and lab technician.
3. Should be working in the field of HIV/AIDS for 6 months or more.

There were no exclusion criteria.

2.7 Sampling plan and sampling procedure

Sample size estimation was done by Stat Calc Epi Info version 6 and taking the expected level of stress among the health care workers in AIDS at thirty percent with worst acceptable limit of twenty three percent; the sample worked out to be 336. Rounding off the sample size was estimated to 350.

Considering the average number of health care workers per ART Centers and CCC as 11 as per operational guidelines of staffing patterns in ART Centers, ICTC centers and CCCs,(58,59) and in ICTC as 2, total of 8 districts were selected to meet the required sample size.

For the Selection of eight districts, the list of all districts of the state with the descending order of prevalence of HIV/AIDS was taken.(54). Upper four and lowest four districts were selected. The total sample size was divided into two groups of 175 each. And each of 175 samples were collected from the two groups of districts.

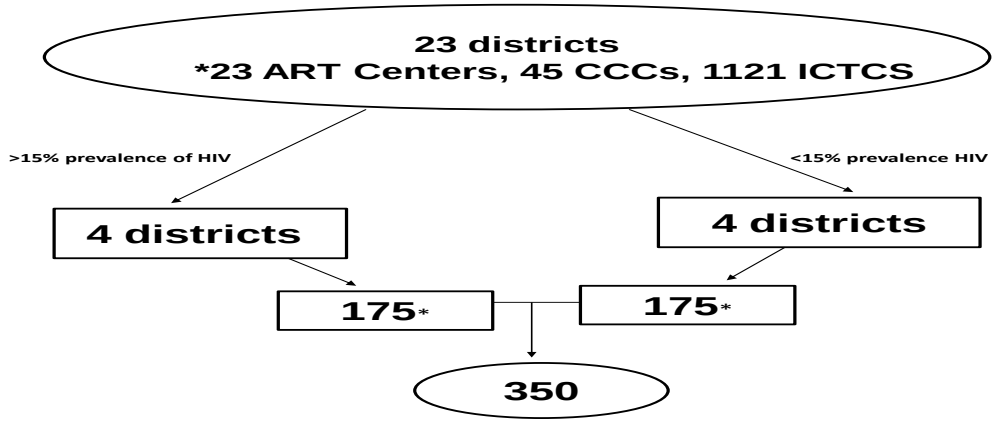

Fig. 2.2: Sampling procedure

2.8 Variables used in the study:

a. Dependent variable:

Occupational stress and burnout- in terms of three sub scales of Maslach burnout Inventory, Emotional Exhaustion, Depersonalization and Personal Accomplishment.

b. Independent variable:

Demographic and socioeconomic variables: Age, sex, education status, marital status, children, income, whether they is any social ostracism due to working for HIV/AIDS,

Work related variables: Type of professional group, location of the center, type of center, nature of employment, work experience, working hours per day, status of training about HIV/AIDS, whether or not respondents able to discuss work related problems.

2.9 Operational definitions:

a. Dependent variable

Occupational stress and burnout:

The term occupational stress and burnout in the study will correspond to the scorings obtained in the Emotional Exhaustion, Depersonalization and Personal Accomplishment of Maslach Burnout Inventory- Human Services Survey.

b. Independent Variables

1. AIDS stress score: The scoring of ASS was dichotomized at median value to describe the low and high levels of stress
2. Sex: Male or Female as reported by the respondents.
3. Age : Age in completed years, as reported by the respondents.
4. Marital Status: As reported by respondents under Single, Married and Separated.
5. Presence of children: As reported by married respondents . the enquiry was in form of yes or no.
6. Educational status: As reported by the respondents. It was enquired under the categories of higher secondary, graduation and post graduation.
7. Profession: As reported by the participants under Doctor, Nurse, Counselor and lab technician category.
8. Average net income per month: open ended question as reported by the respondent.
9. Type of Center: As reported by the respondent under the category of ART, ICTC, CCC.
10. Location of the center: As reported by respondents under rural and urban.
11. No. of years working as in current profession (work experience): open ended as reported by respondents

12. Nature of employment: As reported by respondents under temporary and permanent category

13. Area of work: As reported by respondents. The response was inquired under OPD, IPD or both headings.

14. Daily working hours: As reported by the responded. The query was addressed under three categories with reference to last 3 months. They were less than 3 hours, 3 to 6 hours and more than 3 hours.

15. Training status: As reported by the responded as yes or no on query about receiving any training on HIV/AIDS health care delivery.

16. Social support: Social support will functionally operationalzed within the context of this study as, whether they are socially ostracized for working in HIV/AIDS and whether or not they are able to discuss the work related problems with colleagues at different levels without violating confidentiality of patient.

2.10 Tools used:

The researcher used the following data collection and analysis tools:

1. A **structured** questionnaire was used to collect the data pertaining to the demographic and work related predictor variables. The variables included were, age, sex, marital status, level of education, children, occupation, type of center, working hours, working environment , social ostracism. This part of the questionnaire was developed by the researcher and the second half of the questionnaire comprised of standardized questionnaire having AIDS stress scale as developed by Joseph H. Plerk (1987) and the Maslach burnout inventory –Human services survey developed by Maslach, Jackson and Schwab (1996)

2. **AIDS Stress Scale**[61] is an 8 item scale that was developed to assess the challenges posed to the health care workers as a result of working with AIDS and persons with AIDS. Using a 4-point liekert type scale, respondents indicate their degree of comfort with AIDS patients and with family and friends of persons with AIDS as well as the degree of risk they perceive as a result of their jobs. There are 5 yes-no questions assessing stress related to working with the patients with AIDS, whether they feel their knowledge is sufficient to deal with the physical and emotional needs of AIDS patients and with the family and friends of AIDS patients. Each item is scored from 1 to 4 and the score for the scale is obtained by the mean of item scores. The mean score is the indicator of AIDS stress, with higher scores indicating more stress. The reliability of the scale has been demonstrated with a Cronbach's alpha=0.668.

3. **Maslach Burnout Inventory – Human Services survey**[62] is a 22 item questionnaire designed to assess the three aspects of the burnout syndrome: Emotional Exhaustion, Depersonalization and lack of personal accomplishment. Each aspect is measured by a separate subscale. The Emotional Exhaustion (EE) sub scale assesses feelings of being emotionally overextended and exhausted by one's work. The questionnaire has nine items pertaining to the measure of EE. The Depersonalization (DP) measures an unfeeling and impersonal response toward recipients of one's service, care, treatment or instruction. The scale has eight items reflecting the domain of DP. The Personal Accomplishment (PA) subscale, total of 5 items in scale, assesses feeling of competence and successful achievement in one's work with the people. The frequency with which the respondent experiences feelings related to each subscale is assessed using a six point, fully anchored response format. It is recommended to report Personal Accomplishment as direct computations of item scores rather than as Diminished Personal Accomplishment based on reverse items.

   Burnout is not defined dichotomously, as either present or absent. Instead, it is conceptualized as a continuous variable, ranging from low to moderate to high degrees of experienced feeling. Thus on determining and categorizing the levels of burnout, Maslach, Jackson and Leiter (1996) suggest the following guidelines:

      1. A high degree of burnout is reflected in high scores on Emotional Exhaustion and Depersonalization subscales and in low scores on the personal Accomplishment subscales.

2. An average degree of burnout is reflected in averages scores on the three subscales

3. A low degree of burnout is reflected in low scores on the Emotional Exhaustion and Depersonalization sub scales and in high on the Personal Accomplishment subscale.

The scores are considered high if they are in the upper third of the normative distribution, average if they are in the middle third and low if they are in the lower third. The numerical cut off are shown in table 1. however, the authors also suggest that with the given limited knowledge about the relationships between the three aspects of burnout the scores for each subscales are considered separately and not combined to a total single score. Thus, three scores are computed for each respondent.

Table 2.1: Categorization of MBI scores

MBI Scores	Range of experienced burnout		
	low	average	high
EE	<=16	17-26	>26
DP	<6	6-9	>9
PA	>39	34-39	<34

Reliability coefficients for the subscales are : 0.90 for Emotional Exhaustion, 0.79 for Depersonalization and).71 for Personal Accomplishment.

The MBI-HSS takes about 10 minutes to fill out and is self administered with complete instructions provided for the respondent in the questionnaire.

Scales were administered in English

2.11 . Project management.

There was no change in the plan of study conducted. As, planned the principle investigator single handedly collected the data.

Fig 2.3 Time line for the study.

Activity	**April**	**May**	**June**				**July**				**Aug**				**Sep**				**Oct**			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
TAC approval																						
IEC approval																						
Data collection																						
Data entry																						
Data cleaning and analysis																						
Data analysis part 1 presentation																						
Data analysis part 2 presentation																						
Report writing																						
Thesis submission																						

2.12. Data Collection

Data collection could only start from 1st of July 2010 after mapping all the districts listed for data collection. On average two centers were visited on each working day. And on average two days were consumed to reach the districts listed for data collection. The data collection could only be completed by 15th of September as many places were to be visited twice or thrice to collect the pending questionnaires.

Overall 350 forms were distributed and 308 forms were received by the researcher (response rate of 89.9 %)

2.13 Data Entry and Storage:

Data collected were entered in Epidata version 3.1 and later exported to SPSS for windows version 16 for analysis purpose. The hard copies of questionnaire are stored in a locked cupboard under vigilance of the principle investigator. The soft copy version is also under the custody of principle investigator. The privacy and confidentiality of the participants is being strictly maintained

2.14 Data Analysis:

Data was entered and scrutinized in Epi Data version 3.1 and then it was exported to SPSS version 16 for analysis purpose. The baseline characteristics were analyzed by descriptive statistical principles, for eg. Mean age, sex proportion, educational status, income etc. All the continuous socio-demographic and work characteristic variables were categorized. . The three sub scales scores of MBI-HSS were specified as three separate criterion variables. Raw scores of the three subscales were summed and then transformed into low, moderate or high. The cut off values are demonstrated in table 2.1. Association between the levels of burnout and HIV/AIDS was shown by the correlations obtained between the variables ASS and sub scale components. Then higher level of burnout was defined as per the cut off suggested in the manual for each sub scales of MBI scale. Descriptive statistics of the high degree of burnout across the socio-demographic and work characteristics were done. Differences in the prevalence of "burnout" were tested with Chi-square test for binomial variables. Multiple logistic regression analysis was performed to find the most important predictor of high levels of stress. The logistic regression coefficient was used to estimate the odds ratio for each of the independent variables in the model. A p value <0.05 was used as the level of significance.

2.15 Ethical Considerations:

The study obtained clearance from Technical Advisory Committee and Institute Ethical Committee of Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvanthapuram, Kerela prior to data collection.

Permission was sought from the respective head of the departments/ Incharge of the Centers prior to the administration of questionnaire to the respondents.

A written informed consent was taken from each participant separately before administering the questionnaire.

Each respondent was met separately to maintain privacy.

The investigator was present at the site of data collection for any kind of clarifications sought by the participants.

Confidentiality and strict anonymity was maintained throughout

Chapter III

Results

This chapter describes the findings of the study in detail. The chapter contains three sections. The first section describes the baseline characteristics of the sample. The second section deals with the finding the levels of stress among the health care providers of HIV/AIDS. The chapter ends with the third section which is the description of relationship between predictor variables and occupational stress in final section

3.1. Description of the sample

The sample of the study was comprised of 308 participants meeting study inclusion criteria. The proportion of males and females in the sample were found to be more or less similar. Proportion of counselors responding to the questionnaire was almost double that of nursing staff or the doctors. 70% of the study population was married and among married also around 77% had children. The mean age of the participants was 31.46 with SD of 7.47. On categorization into two groups with the mean, 42.85% (132) were under the age of 31 years and 57.14% (219) were above the age of 31 years. On demonstrating the income distribution across each profession it was found that 74.2% of the total doctors respondents were into the higher quartile of the income group, 50.4 % of the total counselors were in mid quartile and 78.3 % of the nurses were in the lower quartile of income group.

Table 3.1. Demographic characteristics of the sample population.

Variables	N	%
1. Sex		
Male	161	52.3
Female	147	47.7
2. profession		
Doctor	62	20.2
Nursing staff	69	22.4
Counselor	127	41.2
Others	50	16.2
3. Age		
20-30 yrs	132	42.85
>30 yrs	176	57.14
4. Marital status		
Single	89	28.89
Married	219	71.1
5. presence of children		
Yes	168	76.7
No	51	23.3
6. Education		
Higher secondary	53	17.2
Graduation	107	34.7
Post graduation	148	48.1
7. Income		
<10 thousands	161	52.27
10000-20000	101	32.79
>20000	46	14.93

3.2 **Workplace characteristics**

Out of total sample size, around two third respondents reported that the location of their work center is urban. Most of the sample population (87.3%) responded that they got into the job of HIV/AIDS service delivery out of interest, also it has to be noted that almost all (90%) were temporary employees. Most of the respondents (87%) reported to work for more than 6 hours in last three months.

Table 3.2. Work Place characteristics of the sample population.

Variables	N	%
1. Type of Center		
ART	108	35.1
ICTC	119	38.6
CCC	81	26.3
2. Location of the Center		
Rural	83	26.9
Urban	225	73.1
3. Nature of employment		
Temporary	277	89.9
Permanent	31	10.1
4. Area of wok		
OPD	85	27.6
Inpatients	31	10.1
Both	192	62.3

Table 3.2. Work Place characteristics of the sample population (contd)

Variables	N	%
5. Received training in HIV/AIDS		
Yes	249	80.8
No	59	19.15
6. no. of working hours per day		
<6hrs	40	12.98
>=6hrs	268	87.01
7. Total years or work experience		
<3 yrs	169	54.87
>3 yrs	139	45.12
8. Reason for joining the job		
out of interest	269	87.3
The only option available	39	12.7
9. work discussion		
No	101	32.79
Yes	207	67.2
10. social ostracism		
No	209	67.85
Yes	99	32.14

3.3 **Severity of stress among the study population**

The severity of stress among the study sample was given by the mean scores of sub scales of MBI scales. Here, scoring of AIDS Stress Score is also worth noting as it helps to quantify the levels of stress perceived by sample populations which is exclusively due to challenges posed by health care workers as a result of working with AIDS and person with AIDS.

The mean score of AIDS stress Score was found to be 2.03 with the SD of 0.54.

The mean score of EE of MBI scale was found to be 13.49 with SD of 8.72,

that of DP was 6.12 with SD of 6.29 and that of PA was 36.66 with SD of 9.005

Table 3.3: Mean score of AIDS Stress Scale and sub scales of MBI

Statistics	**AID Stress Scale**	**MBI subscales**		
		EE	DP	PA
N	308	308	308	308
median	2.03	12	3	38.5
SD	0.54	8.72	6.29	9.005
minimum	1	0	0	11
maximum	3.62	42	22	48

3.3.1: **Prevalence of stress and burnout:**

In the sample population, overall across the domains, 38% of the respondents were seen to have moderate to high levels of burnout in atleast one of the 3 domains of MBI. However, only 2.9% of the study populations showed higher degree of burnout in all domains of MBI.

Table 3.4. Percentage of experienced burnout on MBI subscales.

	MBI subscales		
Levels	**EE**	**DP**	**PA**
Low	68	60	33
Moderate	25	9.7	21
High	7.1	31	46

* *Cumulative percentage may be more than 100% as one sample can be reflected in two or more domains*

3.4 Associated factors analysis of stress

As a first step in exploring the factors associated with stress simple bi-variate analysis for each variable estimating unadjusted odds ratio with 95 percent confidence interval and p value were noted. All the independent variables were separately cross tabulated with Emotional Exhaustion, Depersonalization and Personal Accomplishment to find the association of each independent variables with the domains of MBI.

3.4.1. **Factors for Emotional Exhaustion (EE)**

Table 3.5: Association of various factors with Emotional Exhaustion

	N=308	OR	95% CI	p value
Sex	**Female (48%)**	2.5	0.97 - 6.05	0.046
	Male	**1**		
Employment	**Temporary (90%)**	0.91	0.88 - 0. 95	0.103
	Permanent	1		
Reason for joining job	**only option (12.7%)**	2.8	1.07 - 6.2	0.032
	out of interest	1		
Social Ostracism	**No (67.9)**	4.1	1.67 - 10.22	0.001
	Yes	1		
Work discussion	**Yes (67.2%)**	2.17	0.910 - 5.2	0.074
	No	1		

Inferences:

i) Females were found to be 2.5 times prone to suffer from Emotional Exhaustion than males.

ii) People who responded to have working for HIV/AIDS as compulsion than interest were found to be 2.8 times associated with EE.

iii) No social ostracism due to working for HIV/AIDS seemed to have 4.1 times likely to manifest in Emotional Exhaustion.

iv) Those who have been discussing work related problems with collegues were 2.17 times likely to have Emotional Exhaustion

3.4.2 **Factors for Depersonalization (DP)**

Table 3.6: Association of various factors with Depersonalization

	N=308	OR	95% CI	p value
Income	**<=9000 (37%)**	1.7	1.2 - 2.5	0.001
	>9000	1		
Employment	**Temporary (90%)**	1.35	1.33 - 19.8	0.002
	Permanent	1		
Area of work	**OPD/IP (38%)**	2.56	1.48 - 4.43	0.001
	Both	**1**		
reason for joining job	**only option (12.7)**	1.9	1.3 - 6.1	0.001
	out of interest	1		
Received training	**Yes (80%)**	1	0.16 - 0.74	0.005
	No	2.8		
ASS Score	**>=2 (51%)**	2.05	1.4 - 2.9	0.0001
	<2	1		

Inferences:

i) Of the demographic variables only income showed to have association with DP.

ii) Higher AIDS stress score showed higher levels of Depersonalization

iii) Respondents working in either OPD or IPD settings of the center showed more likely to be associated with Depersonalization than those working in both the settings.

iv) People who responded to have working for HIV/AIDS as compulsion than interest were found to be 1.9 times associated with Depersonalization.

3.4..3 **Factors for low Personal Accomplishment (PA)**

Table 3.7: Association of various factors with Personal Accomplishment

	N=308	OR	95% CI	p
Type of center	**ICTC+ART(74%)**	2.16	1.98-4.32	0.003
	CCC	1		
Sex	**Male (53%)**	1.7	1.12-2.7	0.014
	Female	1		
Income	**>9000 (49%)**	2.3	1.4-3.7	0.001
	<=9000	1		
Received training	**No (20%)**	2.48	1.377-4.47	0.002
	Yes	1		
Employment	**Temporary (89%)**	3.15	1.4-7.09	0.004
	Permanent	1		
AIDS Score	**>=2 (51%)**	2.19	1.39-3.47	0.001
	<2	1		
Education	**>15 yrs (61%)**	2.27	1.42-3.6	0.001
	<=15 yrs	1		
Reason for joining job	**only option (13%)**	2.4	1.17-5.12	0.015
	out of interest	1		

Inferences:

i) People working in centers predominantly with Out Patients settings (ART and ICTC) are likely to have 2.16 times low Personal Accomplishment

ii) Higher income group people are 2.3 times more likely to have lower Personal Accomplishment.

iii) Those not receiving training on HIV/AIDS health care delivery systems were 2.48 times likely to have low Personal Accomplishment.

iv) Again, temporary staff showed 3.15 times chances of having low personal accomplishment then the counterpart.

v) Higher levels of AIDS Stress Score showed 2.19 times likely of perceiving low personal accomplishment.

vi) Contrary to general beliefs, higher levels of education seemed to contribute 2.27 times in having low personal accomplishment.

vii) Reason for joining the job out of compulsion rather than interest showed association with the low Personal Accomplishment of the individuals.

3.5 Multivariate analysis (Binary logistic regression)

Multiple logistic regression, was performed to estimate the factors in the context of stress, represented by the three domains of MBI scale.

The analysis measures the effect of change in variation of one of the variable (independent) on the variation of the other variable (dependent) adjusted for other independent variables in the model. The purpose of performing multivariate analysis was to understand how importantly the independent variables, both individually and when acting together, explain the variation in the dependent variable. The net bearing effect of different independent variables was explained in terms of odds ratio (OR).

Given below is the regression analysis to determine predictor variables for MBI domains.

Table 3.8: Final model to explain Emotional Exhaustion:

Variable	adjusted OR	95% CI
Sex (Female : Male)	2.19	1.25 - 6.25
Got into job (only option : interest)	2.27	1.11 - 7.8
Social ostracism (No : Yes)	3.74	1.45 - 9.8

OR: Odds Ratio.

Table 3.9: Final model to explain Depersonalization

Variable	adjusted OR	95% CI
Got into job (only option : interest)	2.9	1.75 - 7.33
Working for OPD/IP (Yes : No)	2.44	1.34 - 4.44
Received training for HIV (Yes : No)	2.83	1.22 -6.55

OR: Odds Ratio.

Table 3.9: Final model to explain Low Personal Accomplishment

Variable	adjusted OR	95% CI
Employment (Temporary :Permanent)	3.7	1.55 - 9.24
received training for HIV (No : Yes)	2.2	1.18 - 4.37
ASS Score (higher : lower)	2.06	1.26 - 3.36

OR: Odds Ratio.

Inferences for regression analysis:

i) Those who got into the service of HIV/AIDS health care delivery due to compulsion were found to be associated with the domains of Emotional Exhaustion and Depersonalization. It was found that those working out of compulsion were 2.27 times likely to suffer from emotional exhaustion, and 2.9 times likely to suffer from Depersonalization.

ii) Females were found to have 2.19 times likelihood of emotional exhaustion than males.

iii) Those who responded not to have suffered from social ostracism due to their work in HIV/AIDS were found to be 3.74 times suffering from emotional exhaustion

iv) Two distinct features on training status were found. Those who had received training on HIV/AIDS were found to have 2.44 times likely to suffer from Depersonalization; however, the finding was reverse for low personal accomplishment. In the domain of low personal accomplishment those who have not received training on HIV/AIDS were found to have higher odds.

v) AIDS Stress Score though showed association with Depersonalization and low personal accomplishment independently, on adjustment with other variables, it was found non significant for Depersonalization. However, the final model for Low Personal Accomplishment showed that higher the AIDS Stress score, there are chances of 2.06 times of low Personal Accomplishment.

In the following chapter a detail discussion on major findings of the study will be done.

Chapter IV

Discussion and Conclusion

This chapter deals with the discussion of the study findings in details with comparison with previous studies. The description will be under subheadings of sample characteristics, patterns of occupational stress, and levels of occupational stress with associated variables. It will be followed by the strengths and limitations of the study. The chapter concludes with the recommendations.

4.1 Sample characteristics

The study comprised of 308 participants who included doctors, nursing staff, counselors and lab technicians of the Anti Retroviral centers, integrated counseling and testing centers and community care centers of Andhra Pradesh. The sample had predominantly counselors followed by nursing staff and doctors. Gender distribution was almost equal in the sample. The majority of the sample population worked in outpatient settings. Among the centers included in the study majority of were urban base. Almost all of the participants reported to be the temporary employee to the centers they are working in and almost ninety percent of the respondents reported to be working in the field of HIV/AIDS out of interest. More than two thirds of the sample populations of doctors were in the upper quartile of income group and more than two thirds of nursing staff were in the lower quartile of income group.

4.2. Patterns of occupational stress

The study demonstrated that more than one third of the study population suffering from burnout. It is also significant to note here that only 2.9% of sample population showed extreme degree of burnout. The finding of extreme degree of burnout is comparatively lower than those reported in other studies.[9,36,61] The findings suggest that there is significant amount of burnout prevailing among the health care workers of HIV/AIDS across all domains of MBI and the findings are in agreement with the various studies undertaken in various part of the world.[9,36,37,52] It should be note that the Emotional Exhaustion scorings are lesser than other samples[36,54] and scores on Personal Accomplishment in the study sample was almost equal to these studies. So, it seems that in comparison to western studies degree of emotional exhaustion was found to be low and feeling of self worth in work measured by PA score was high.

The higher score in AIDS Stress was found to be predictor of low Personal Accomplishment. The association if the AIDS stress scale was also demonstrated in the domains Depersonalization. This indeed underlines the possibility that AIDS related work is inherently stressful. However, more exploration is required to clench the possibility that the higher stress as measured by ASS, translates to the higher degree of burnout in MBI scales.

4.3 Factors associated with stress.

Several factors were found to be associated with the domains of MBI scale. Some were similar to the findings of earlier studies and some were in contrary to them.

Counselors and nurses showed higher levels of burnouts in comparison to other professionals and the findings are consistent with other studies.[26,34]

Sex of the participants was found to be associated with the domain of Emotional Exhaustion. Females showed higher degree of emotional exhaustion than males.[26,34,44]

Monthly income was significantly associated with the domains of Depersonalization and lower Personal Accomplishment. A similar study finding reasons for job dissatisfaction showed that those who do not enjoy their work was primarily due to dissatisfaction with salary.[47]

In terms of work related factors, nature of employment, reason for getting into the job, received training on HIV/AIDS care delivery, area of work and type of setting were found to be significantly associated with any one of the MBI subscales domain.

Temporary nature of employment showed association with Depersonalization and the predictor for low Personal Accomplishment. Similar findings were suggested in the study conducted in employees of AIDS Service Organization, New York, were employees have rated job insecurity as moderate predictor of stress.[51]

No association was demonstrated for length of time spent with working in AIDS care, which is in agreement with the findings of Hayter[35.] However, it conflicts with the findings of research in other areas of care where there is a relationship with burnout development with time.[35]

Respondents who reported to discuss their work related problems with colleagues were found to be significantly associated with Emotional Exhaustion. The findings are in contrary to the findings suggested by Wenche where he has pointed out that the counselors were stressed as they were not able to share the burdens with colleagues, either because they worked alone or because work relationships were not conducive of this kind of sharing.[47]

There was an association of joining the job out of interest among the domains of De personalization and Personal Accomplishment. Participants reporting getting into HIV/AIDS service as the only career option were found to have three times likely of suffering from De personalization and around four times likely to have low Personal Accomplishment. The findings of the study are in line of J.Lopez, who has reported the reason for joining the job as the strongest predictor on intensity of burnout.[26] However, a study in India among the palliative care workers of HIV/AIDS showed no association of reason for working with HIV/AIDS with any of the domains of MBI .[6]

Respondents having received trainings were found to have higher burnouts in domain of De personalization and Personal Accomplishments. This finding is in contrary of the findings of Wenche, where it is demonstrated that counselors reported feeling of insecure in their roles

due to insufficient trainings and experience. Also, the health care workers reported the need to training related to psychological aspect of care and lack of training was considered as one of the reason for stress.[47]

Social ostracism due to work in the field of HIV/AIDS was found significantly associated with the Emotional Exhaustion. Respondents who said they are not socially ostracized was found to be predictor emotional exhaustion. The study in Italy has shown no co relation between the stigma associated and the stress, however, a study among the nurses of five African countries have shown that there is a significant association of job satisfaction and social stigma among the nurses working in the field of HIV/AIDS.[46]

Participants working either in OPD or IPD setting of the centers were found to be the predictor of Depersonalization. This finding is not in line of findings of J.Lopez, where it's reported no significant association of burnout with work setting.[26]

4.4 Strengths of the study.

- To our knowledge very few studies have been conducted in Indian setting to find out the levels of stress and the factors associated with it among the health care providers of HIV/AIDS. Thus, this study tried to identify and explore the levels of staff stress in health care delivery of HIV/AIDS.

- The strengths also include the use of standardized tool (MBI) with established reliability and validity.

- The inclusion of different occupational group has facilitated comparison across the different occupational group.
- The study was conducted by a single investigator which helped to reduce the selection bias.

4.5. Limitations of the study

- The major limitation of the study is the lack of comparison group.
- Also there was no attempt to identify possible personal variables such as personal traits, ways of coping, past stressful life events contributing to present stress.
- The study did not include the private health care providers who serve in the field of HIV/AIDS

4.6 Recommendations:

- There is a need of more studies from the developing countries to understand the patterns of staff stress. Moreover, studies are recommended across various settings with larger samples for better comparisons across different settings.
- Modifications in human resource policy to address the job insecurity as found significant in the study, is also recommended. There can be provisions of having a longer duration of work contract with the feature of lock in period. This might help to reduce the levels of distress among the health care providers.

5.7 Conclusion

The study was able to demonstrate a significant level of stress among the health care workers of HIV/AIDS in Andhra Pradesh. The factors as shown in the conceptual framework were found to be associated and predictors of burnout in the current study. Job insecurity was found be one of the major and significant factor contributing to stress. The other associated factors were the sex of the participants, taking up the job out of interest, job specific training and HIV/AIDS disease specific reasons which is demonstrated by AIDS Stress Scale. Apart from sex all the other factors were found to be the modifiable factors. Thus, the study emphasizes the need of further exploration of the factors with addition of variables including personal and environmental to yield a holistic picture of the issue of staff stress

Bibliography:

1. Olson DH, Russell CS, Sprenkle DH. Complex model: Systemmic assessment and treatment of families. New York: Haworth press, 1989.
2. Lazarus RS. Stress and emotion: a new synthsis. Springer Publishing Company, Inc, 2006.
3. Lekha S. Work, Organisation and Stress. http://www.who.int/occupational_health/publications/pwh3rev.pdf (accessed on 14/10/10)
4. www.stress.org/job.htm accessed on 14/10/10
5. http://www.who.int/occupational_health/ILO_WHO_2003_report_of_joint_committee.pdf (accessed on 15/10/10)
6. National Institute for Occupational Safety and Health. http://www.cdc.gov/niosh/ (accessed April 13, 2010).
7. Maslach C, Jackson SE., Leiter MP. Maslach burnout inventory manual, 3rd edn. Palo Alto, California: Consulting Psychologists Press Inc, 1996.
8. Pradhan M, Misra N. Life stress and burnout among couples in medical profession, *Indian Journal of Clinical Psychology* 1995; 22: 17-22.
9. Chandra PS, Jairam KR, Jacob A. Factors related to staff stress in HIV/AIDS related palliative care. www.jpalliativecare.com (accessed Feb 4, 2010).
10. Cartwright S, Cooper CL, Barron A. An investigation of the relationship between occupational stress and accidents amongst company car drivers. *Journal of General Management* 1993; 19: 78-85.
11. Kruse RG, Chapula TB, Scot I, Nkhoma M, Quiterio N, Pankartz D. Burnout and use of HIV services among health care workers in Lusaka District, Zambia: a cross sectional study. *Human resources for health* 2009; 7: 55.
12. http://www.who.int/hiv/data/2009_global_summary.gif downloaded on 1/10/10)
13. HIV/AIDS in Asia and the Pacific Region, 2001. www.who.org (accessed Oct 1, 2010).
14. Annual report NACO, 2008-2009. www.nacoonline.org (accessed Oct 1, 2010).
15. Demmer C. Burnout: The healthcare worker as survivor. *AIDS Read* 2004; 14: 522-37.

16. McKusick L, Horstman W. The impact of IADS in physician. Los Angeles: University of California Press,1986.
17. Vente WD, Olff M, Van AJ. Physiological differences between burnout patients and healthy controls: blood pressure, heart rate, and cortisol responses. *Occup Environ Med* 2003; 60: 154–61.
18. Cynthia L, Thomas WD. A Review and an Integration of Research on Job Burnout. *The Academy of Management Review* 1993; 18: 621-56.
19. Freudenberger HJ. Staff burn-out. *Journal of Social Issues* 1974; 30: 159-65.
20. Maslach C. Burned-out. *Human Behavior* 1976; 5: 16-22.
21. Maslach C, Jackson SE. *The Maslach Burnout Inventory.* Palo Alto, CA: Consulting Psychologists Press, 1981.
22. Maslach C, Jackson SE. Maslach Burnout Inventory - Human Services Survey (MBI-HSS) . Palo Alto, CA: Consulting Psychologists Press, 1996.
23. Protecting Worker's health series 3. Work organization and Stress. World Health Organisation, 2003.
24. Alan L, John C, Weiss LR. Balancing the Personal and the Professional Should and Can We Teach This?. *Academic Psychiatry* 2007; 31:2.
25. Gulalp B, Ozgur K, Azade S, Zikret K. Burnout: need help?. *Journal of Occupational Medicine and Toxicology* 2008; **3**: 32
26. Castilloa MJ, Gurpeguia JL, Ayuso-Mateosc JD, Lunab, Cataland J. Emotional Distress and Occupational Burnout inHealth Care Professionals Serving HIV-Infected Patients: A Comparison with Oncology and Internal Medicine Services. *Psychother Psychosom* 1999; 68: 348–56.
27. Tait D, Shanafelt MD, Katharine A, Bradley MD, Joyce E, Wipf MD, Anthony LB. Burnout and Self-Reported Patient Care in an Internal Medicine Residency Program. *Annals of Internal Medicine* 2002 ; 136: 361.
28. Liselotte ND, Matthew RT, Stanford MF, David VP, Anne E, William H. Burnout and Suicidal Ideation among U.S. Medical Students. *Annals of Internal Medicine* 2008; 149: 334.
29. Takashi S, Qiaolian F, Shoji N. Relationship between turnover and burnout among Japanese Hospital nurses. *Journal of Occupational Health* 2005; 47: 334-36.

30. Azwihangwisi H, Mavhandu-Mudzusi ma, Vhonani ON, Mashudu DM. Nurses experiences of delivering voluntary counseling and testing services for people with HIV/AIDS in the Vhembe District, Limpopo Province, South Africa. *Nursing and Health Sciences* 2007; **9**: 254–62.
31. Gina RK, Bushimbwa TC, Scott I, Mavis N, Nicole Q, Debra P. Burnout and use of HIV services among health care workers in Lusaka District, Zambia: a cross-sectional study. *Human Resources for Health* 2009; 7: 55.
32. Mirsalimi H, Roffe MW. Psychosocial correlates of burnout and depression in HIV counselors. *Education resources information Center* 1991; 143: 3-4.
33. Kerry EU, Jenny N, Ava A. Caring for the Caregivers: Models of HIV/AIDS Care and Treatment Provision for Health Care Workers in Southern Africa. *The Journal of Infectious Diseases* 2007; 196: 500–04
34. Moreno-Jimenez B, Rodriguez-Carvajal R, Velasco-Furlong L. Burnout process and hiv/aids: main implications for health care workers. http:/redalyc.uaemex.mx (accessed Oct 1, 2010).
35. Hayter M. Utilizing the Maslach Burnout Inventory to measure burnout in HIV/AIDS specialist community nurses: the implications for clinical supervision and support. *Primary Health Care Research and Development* 2000; 1: 243-53.
36. Hayter M. Burnout and AIDS care related factors in HIV community clinical nurses specialities in north of England. *J Av Nurs* 1999; 29: 984-93.
37. Dyk VC. Occupational stress experienced by caregivers working in the HIV/AIDS fields in South Africa. *African journal of AIDS research* 2007; 6: 49-66.
38. Marchal B, Brouwere DV, Kegels G. Viewpoint: HIV/AIDS and the health care work force crisis: what are the next steps?. *Tropical medicine and International Health* 2005; 10: 300-04.
39. Singh M, Singh G. Assessment of Mental Health Status of Middle-Aged Female School Teachers of Varanasi City. *The Internet Journal of Health* 2006; 5: 1.
40. Bakhshi R, Sudha N, Sandhu P. Impact of Occupational Stress on Home Environment: An Analytical Study of Working Women of Ludhiana City. *J. Hum. Ecol.* 2008; 23: 231-35.
41. Beer J. Burnout and stress, depression and self-esteem of teachers. *Psychological Reports* 1992; 71 : 1331-36.

42. Dasgupta H, Kumar S. Role Stress Among Doctors Working in a Government Hospital in Shimla (India). *European Journal of Social Sciences* 2009; 9: 356-70.
43. National AIDS Control Organisation. Operational guidelines for ART centres. http://www.nacoonline.org/upload/Care%20&%20Treatment/ART%20operational%20%20guidelines%202008.pdf(accessed Sept 4,2010).
44. Dieleman M, Biemba G, Mphuka S, Sichali KS, Sissolak D, Kwaak A, Wilt GJ. We are also dying like any other people, we are also people: perceptions of the impact of HIV/AIDS on health workers in two districts in Zambia. Health *Policy and Planning* 2007; 22: 139–48.
45. Prüss-Ustün A, Rapiti E, Hutin Y. Estimation of the global burden of disease attributable to contaminated sharps injuries among health-care workers. Am J Ind Med. 2005; 48: 482-90.
46. Maureen LC, Minrie G, Thecla WK, Joanne RN, Lucy NM, Priscilla SD. HIV Stigma and Nurse Job Satisfaction in Five African Countries. *Journal Of The Association Of Nurses In Aids Care* 2009; 20; 14-21.
47. Wenche D, Susan DS, Fanny D. Exploring perceptions and emotional burdens of HIV/AIDS health care workers. http://www.hsrc.ac.za/research/output/outputDocuments/5137_Dageid_Exploringperceptionsandemotionalburdens.pdf (accessed Oct 2,2010).
48. Baukje MR, Julie E, Pierrette F, Ryan H, Tatemichi S. Crossing boundaries Family physicians struggles to protect their private lives. *Canadian Family Physician* 2009; 5: 286-87.
49. Masahiro S. Relationship of Nurse Burnout with Personality Characteristics and Coping Behaviors. *Industrial Health* 2008; 46: 326–35.
50. Linda HA, Sean PC, Douglas MS, Julie S, Jeffrey HS. Hospital Nurse Staffing and Patient Mortality, Nurse Burnout, and Job Dissatisfaction. *JAMA*. 2002. http://jama.amaassn.org/cgi/content/full/288/16/1987(accessed Jun 8, 2010).
51. Demmer C. Stress Andsatisfaction Among Employees In Aids Service Organizations In New York. *Evaluation & The Health Professions* 2002; 25: 225-38.
52. Niven CA, Knussen C. Measuring the stress associated with caring for clients with HIV/AIDS. *AIDS Care* 1999; 11: 171-80.

53. Phaswana-Mafuya N, Peltzer K. Perceived HIV/AIDS impact among staff in tertiary institutions in the Eastern Cape, South Africa. *Journal des Aspects Sociaux du VIH/SIDA* 2005; 2: 277-84.
54. Brown LK , Schultz JR, Forsberg AD, King G, Kochik SM, Butler RB. Predictors of retention among HIV/hemophilia health care professionals. *General Hospital Psychiatry* 2002; 24: 48–54.
55. Ramanathan M, Kumar S, Avijit A, Aarty R. Ethics in human resource management: potential for burnout among health care workers in ART center and Community Care Centers. *Indian Journal of Medical Ethics* 2010; 3: 146-51.
56. Takalkar AA, Madhekar NS, Shatrughana MB. Overview of HIV/AIDS in Andhra Pradesh. Letter to the editor. *Al Ame en J Med S c i* 20 10; 3 : 355 - 56.
57. Facts, figures and response to HIV/AIDS in Andhra Pradesh. http://www.prb.org/pdf06/FactsFiguresResponse_HIVAIDS_AndraPradesh.pdf. (accessed Sept 15, 2010).
58. Andhra Pradesh AIDS Control Society. List of Integrated Counseling and Testing centers. http://www.apsacs.org/ictcs.html (accessed Sept 16, 2010).
59. Andhra Pradesh AIDS Control Society. List of ART and Link ART center. www.apsacs.org/art.html (accessed Sept 16, 2010).
60. Andhra Pradesh AIDS Control Society. List of Community Care centers. http://www.apsacs.org/cccs.html (accessed Sept 16, 2010).
61. Pleck J. AIDS Stress Scale 2nd edn. California: Sage Publications, 1998.
62. Maslach C, Jackson SE, Leiter MP. Burnout Inventory manual. 3rd edn. Palo Alto, California: Consulting Psychologists Press Inc, 1996.

Appendix:I

Title: HIV/AIDS & Associated Occupational Stress:A study in Andhra Pradesh

Institute: Sree Chitra Tirunal Institute for Medical Sciences & Technology

Serial No.

(A) Personal Information							
1. Doctor	☐	2. Nursing Staff	☐	3. Counselor	☐	4. Others	☐
Type of Center :	ART	☐	ICTC	☐	CCC	☐	
Location of the Center:	Rural	☐	Urban	☐			
1) Sex:	Male	☐	Female	☐			
2) Age (in completed years)							
3) Marital status	Single	☐	Married	☐	Separated	☐	
4) Do you have children?	Yes	☐	No	☐			
5) What is the highest level of education you have completed?					Higher secondary ☐ Graduation ☐ Post Graduation ☐		
6) Average Net Income per month ……..							

(B) Work Information

1.No. of months/years working as the Current Profession:….

2.Nature of employment: Temporary ☐ ermanent ☐

3. Area of work: OPD In☐tients Both☐ ☐

4. How many hours you have to work at center on a working day, in the last 3 months?	Less than 3 hours ☐ 3 to 6 hours ☐ More than 6 hours ☐
5. Do you get socially ostracized because of your work in the HIV/AIDS center?	Yes ☐No ☐

6. Have you received any training on HIV/ AIDS Yes No ☐ ☐

If " YES" please mention which and for how long: ……..

If " NO", do you think lack of training has caused problems in patient care? Yes No ☐ ☐

7. Are you able to discuss your work related problems with –colleagues at different levels, without violating confidentiality of patient?	Yes ☐No ☐

(C) AIDS Stress Scale

1 Is working with HIV/AIDS patients one of the most stressful parts of your job?	Yes ☐ No ☐
2. Do you think it would be hard for you to deal with more HIV/AIDS patient in future?	Yes ☐ No ☐
3. How comfortable would you say you are with HIV/AIDS patients?	Not at all ☐ Somewhat Uncomfortable ☐ Somewhat Comfortable ☐ Very Comfortable ☐
4. How comfortable would you say you are with friends/families of HIV/AIDS patients?	Not at all ☐ Somewhat Uncomfortable ☐ Somewhat Comfortable ☐ Very Comfortable ☐

5. How much risk do you think you have of getting HIV/AIDS because of your job?	No Risk At All ☐ Very Little Risk ☐ Some Risk ☐ High Risk ☐
6. Do you feel that the knowledge you have is sufficient to deal with the physical need of HIV/AIDS patient?	Yes ☐ No ☐
7. Do you feel that the knowledge you have is sufficient to deal with the emotional needs of HIV/AIDS patients	Yes ☐ No ☐
8. Do you feel that the knowledge you have is sufficient to deal with the families and friends of HIV/AIDS patients	Yes ☐ No ☐

(D) Burnout:

Listed below are 22 statements of job related feelings.

Please read each statement carefully and decide if you ever feel this way about your job. Please Tick how often you feel.

Maslach Burnout Inventory	**Never**	**Few Times A Year**	**Few Times A Month**	**Few Times A Day**	**Everyday**
1. I feel emotionally drained from my work.					
2. I feel used up at the end of the work day.					
3. I feel fatigued when I get up in the morning and have to face another day.					
4. I can easily understand how my patients feel about things.					
5. I feel I treat some patients as if they were impersonal object.					

6. Working with people all day is real strain for me.					
7. I deal very effectively with the problems of my patients.					
8. I feel burned out from my work.					
9. I feel I am positively influencing other people's lives through my work.					
10. I have become more callous towards people since I took up this job.					
11. I worry that job is hardening me emotionally.					

Maslach Burnout Inventory	Never	Few Times A Year	Few Times A Month	Few Times A Day	Everyday
12. I feel very energetic.					
13. I feel frustrated by my job.					
14. I feel I am working too hard on my job.					
15. I don't really care what happens to some of my recipients.					
16. Working with people directly puts too much stress on me.					
17. I can easily create a relaxed atmosphere with my patients.					

18. I feel exhilarated after working closely with my recipients.					
19. I have accomplished many worthwhile things in this job.					
20. I feel like I am at the end of my rope.					
21. In my work I deal with emotional problems very calmly.					
22. I find patients blame me for some of their problems.					

Apendix II.

Informed Consent form

Dear Sir/madam,

I am Dr. Sony Shah, Master of Public Health Scholar in Sree Chitra Tirunal Institute for Medical Sciences and Technology. I am doing a study on "**HIV/AIDS and associated Occupational Stress- a study in Andhra Pradesh**" as a part of course requirement for the completion of course. The purpose of the study is to gather information regarding level of stress among the health care providers and factors associated with this. There will be no direct benefit to you from the study but the information gathered may be beneficial for whole profession in future.

As a part of study, I would like to take a few minutes of you to fill the questionnaire attached. The information provided will be kept confidential, anonymity will be maintained throughout and findings will be used for the research purposes only.

Participation in the study is purely voluntary and you can withdraw from the study at any time.

I am always available to clear your doubt and will try my level best to answer all the queries right now and in future too you can contact me on +91-9346077339. For further information, you may also contact Dr. Anoop kumar Thekkuveettil, Member- Secretary of the Institutional Ethical Committee at SCTIMST, Trivandrum at his office no. 0471-2520256

I fully understand the purpose of the study and am willing to participate

Signature of the Participant Signature of the investigator

Date: Date:

Place: Place: