

**WORKPLACE DEPRESSION: AN  
ANALYTICAL STUDY**

**THESIS SUBMITTED FOR THE DEGREE OF  
DOCTOR OF PHILOSOPHY  
IN PSYCHOLOGY**

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**UNIVERSITY OF CALICUT  
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*Dedicated to Anjali*

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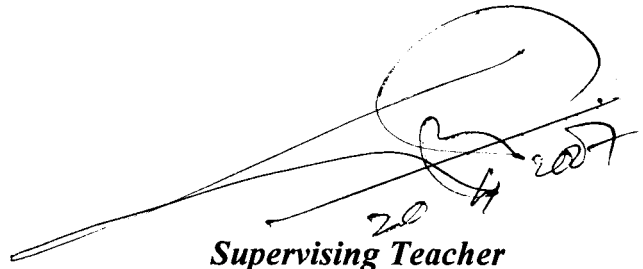
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**CERTIFICATE**

This is to certify that this thesis entitled "**WORKPLACE DEPRESSION: AN ANALYTICAL STUDY**", is a bonafide record of research work carried out by **Mr. Biji Mathew**, under my supervision and guidance, and that no part of this has been presented before for the award of any degree, diploma, associateship, or fellowship of other similar title or recognition.

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## DECLARATION

I, Biji Mathew, do here by declare that the thesis entitled, **WORKPLACE DEPRESSION: AN ANALYTICAL STUDY**, has not been submitted by me for any award of a degree, diploma, or title before.

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Calicut University

20.04.2007

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# INTRODUCTION

Biji Mathew “Workplace depression: An analytical study” Thesis. Department of Psychology , University of Calicut, 2007

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# *Chapter I*

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## *Introduction*

- ❖ *Introduction with relevance of the study*
- ❖ *Statement of the problem*
- ❖ *Objectives*
- ❖ *Hypotheses*
- ❖ *Description of variable under the study*

In Industrial Clinical Psychology, the major focus is on employees whose performance has fallen below acceptable levels, the factors that caused the performance failure and what can be done to correct the problem. In actual practice the main concern is given to the diagnosis and correction of existing deficiencies and thus preventing the performance problem. The various approaches have been taken to deal with preventive measures in nature. Industrial Clinical Psychology is primarily facing the matter of restoring effective performance.

Individual who is mentally healthy has a wide variety of sources of gratification (Beach, 1975). The Mental health of employees has been one of the major concerns of employers. This is because; it is only when workers are in a good physical and mental condition can they work at their maximum efficiency. Health is the outcome of the interaction between the individual and his environment. Thus industrial mental health refers to the maintenance of a healthy environment in the factory or organization, conducive to healthy working conditions for the benefit of the employees. Industrial mental health may comprise measures for (1) protecting workers against any mental health hazards arising out of their work or the conditions under which it is carried on (2) fostering adaptation of workers to their job and work environment and thus contributing to the worker's physical as well as mental adjustments and (3) promoting the establishment and maintenance of the highest possible degree of physical and mental well-being of the workers (Thukaram Rao, 1999).

Employment is central to the experience of adulthood for the majority. Problems in getting or maintaining a job, as well as the actual qualities of the job have important implications for mood. Likewise, salient events and experiences external to the workplace may increase the risk for mood related disorders. Whether depression is a result of workplace stressors, factors unrelated to the job or a combination of both, it will almost certainly affect work functioning leads to a multitude of complex costs for the employer as well as reduction in self-esteem and a further worsening of depression for the individual (Thomas and Hersen, 2000). The various constellations of symptoms may have a significant impact on work absenteeism, work performance, and productivity and so on.

In the era of industrialization and with the tremendous progress of science and technology, there is cut throat competition in every walk of life. The pressure of living is so tremendous that persons have high aspiration, and for that they strive hard to realise those aspiration, but everyone cannot achieve them and this leads to frustration and distress. The effective argues of human beings are their personality, mind, emotions, behaviour etc. When a man behaves normally well with clear mind, intention and will, he can aspire by any goal and can achieve. The misbalanced human beings lead to abnormal behaviour leading to anxiety, tension, frustrations, mental strain and stress, insomnia etc and if it persists for a longer period leads to depression. The affected person becomes introvert, lazy, looses confidence and will power and starts withdrawing from society etc are very dangerous and sometimes leads to lunatic conditions and even they have a tendency to commit suicide and in some cases may have revolting tendency.

Depression is much more than a feeling or emotion. It has the potential to be severe and disabling mental illness with the potential to interfere with all aspects of a person's life. Although depression is very

common, affecting about one in five people yet sometime in their lives, a great deal of misunderstanding exists about the nature of the illness and its diagnosis and treatment.

The workplace is an ever-changing panorama of policy, practice, politics and people. As part of the high performance requirements of the modern workplaces, employees may frequently find that improvements in mobile technologies keep them connected to work around the clock. Expectations and demands from both the workplace and our personal lives can cause significant collisions between work, life style and family. For many individuals depression may result. Depression affects employees at all organizations and on every rung of the corporate ladder. Workplace depression costs employer's billions each year. It ranks among the top three-workplace problems and tends to affect people in their prime working years. American survey statistics show that 76% of the female employees are affected with clinical depression.

The World Health Organization (WHO) identified major depression as the fourth leading cause of World wide disease in 1990. But the present report suggests that by 2020, depression will be the second-leading cause of every disease and disability in the world. (WHO, 2001).

Studies of exploring psychiatric illnesses in the workplace, is no more reported in India especially in Kerala. Hence, this study is an attempt to explore the workplace depression in hospital set up.

Personality almost always means taking a large number of behavioural characteristics and reducing them to a more restricted set of qualities or attributes. Evidence about personality comes partly from what people do and say at various times, but it's also partly a matter of how people perform what they do – the style, their feelings and expression etc. that brings a unique and

personal touch. The personality traits of hostility, anger and aggressiveness have long been suggested as risk factors for depression and as well as coronary heart disease.

An individual prone to develop clinical depressive illness display certain distinctive personality characteristics. An examination of the relevant literature, however, makes it clear that we are very far from consensus about the characteristics of such a putative personality pattern predisposing to depression. The issue is the important one for the understanding and treatment of depressive illness, for two main reasons. First, since an observable personality pattern represents to a large degree of crystallization of underlying psychodynamic processes, agreement on the characteristics of such patterns would offer significant aid to efforts to study psychological factors in the genesis of depression. Second, agreement on the existence of such patterns has a bearing on the investigation of genetic and biochemical factors in depression. Here the study is an investigation to find out the effect of some psychological variables like personality, hostility and occupational stress, in the genesis of depression in the workplace.

Hostility has been conceptualised as primarily a cognitive phenomenon involving cynical attitudes and mistrust of others, although it refers to a broader construct involving hostile attitudes, angry affect and aggressive behaviour. It appears to be an independent risk factor for poor health outcomes. Miller *et al*, (1996) Smith (1994) defined hostility as reflecting "devaluation of the worth and motives of others, an expectation that others are likely sources of wrong doing, a relational view of being in opposition toward others and a desire to inflict harm or see others harmed".

Depressive emotions may be recognized from a sad or tense facial expression, crying, anxiety, fear and sobbing, low voice, resistant, slow speech etc. Their emotions are usually focused on something which the

individual's belief is related to some life situation or personal experience. Irritability or aggressiveness may be related to underlying anxiety or fear, or to resentment, hate or anger. Anger reactions are frequently the expression of fear which will be increased by critical attacks of others or be suppressed by the individual (patient) and then deepen the depressed mood because they feel guilty or rejected. These are certain traits in human character and personality that makes one authoritarian, aggressive or hostile.

Buss (1961) has contended that hostility may be regarded as a continued anger response that has some of the autonomic or postural aspects of anger. When an anger stimulus is presented to a person, it elicits an anger reaction process which involves evaluation of the stimuli in the form of a negative source. Hostility resembles anger in its orientation toward injury and punishment but differs in lacks of autonomic and postural components of anger. However, for some individuals the association between anger and hostility is close, and they only have to recall past humiliation and resentments in order to become angry.

The research evidence demonstrated the role of personality factors in the development of stress related diseases is impressive. However, it is important to keep in mind that personality characteristics are just some of the risk factors in over all picture of health and disease (Adler and Mathews, 1994).

Hostile people tend to react more intensely to stressors than other people do (Lyness, 1993). They experience larger increase in blood pressure, heart rate and the production of stress related hormones. Hostile man and woman also tend to create more stress in their own lives. They experience more frequent and more severe negative life event and daily hassles than other people (Smith, 1992).

There is growing evidence that hostility may contribute to some major health problems and disease endpoints (Smith and Frohm, 1985). The findings have consistently suggested that hostile people report more health problems, daily stress and tension etc. While the potential impacts of hostility on severe health problems have been extensively studied. But, the association between hostility and psychological impairments is not known very well. Hence this study is trying to explore the impacts of hostility on depression.

Work plays a vital part in all our lives. For the individual it provides an opportunity to earn wages, which in turn provides greater financial security and increases the opportunities to acquire material wealth. It also provides social status and identity, a sense of achievement and a means of structuring one's time (Jahoda, 1981). The nature of work and workplace, particularly that involving stressful tasks, can however be the cause of mental ill health or a contributing factor to such illness (Gabriel and Liimatainew, 2000; Michie and Williams, 2003).

Sources of occupational stress (or 'stressors') have been categorised by Cooper and Marshall (1976) as: intrinsic to the job, role in the organisation, relationships at work, career development, organisational structure and climate, homework interface. Those that are 'intrinsic to the job' will include physical aspects of the working environment, such as noise and lighting and psychosocial aspects, such as work load etc will vary in importance depending on the job. Health care professionals experience high workload, the need to work long hours, time pressures and inadequate free time etc (Wolfgang, 1988; Sutherland and Cooper, 1990). Sources of pressure are derived not only from factors inherent in the job itself, but also from the organisational context, such as the structure and climate of the organisation (such as the management style, level of consultation, communication and politics). Stressors do not act on a passive individual; he/she is likely to take

action to cope with sources of pressure. It is when these coping strategies fail that an individual will experience negative stress outcomes, such as physical or mental ill-health.

The experience and the perception of all these occupational stressors, hostility and the mental ill-health depend on a variety of factors including personality, training and environment, locus of control and such as the degree of control the individual has over the situation etc. Cooper *et al* (1999) found that anaesthetists felt a lack of control and autonomy at work that had significant negative effects on their well-being. Depending on the work environment, occupational stress is subjective. Many researches have identified sources of pressure, but these only lead to negative outcomes if they are negatively perceived. The experience of stress is affected by a variety of individual factors, including age, sex, personality and ways of coping etc. And there will be differences in the type of symptoms suffered by an individual in response to exposure to different stressors.

Sustained work-related stress is an important determinant of depressive disorders. Such disorders are the fourth leading cause of the global disease burden. Jones, *et al* (1998) found that 26.6% of respondents, in their questionnaire – based survey of the working population, reported suffering from work-related depression or anxiety, or a physical condition which they attributed to work-related stress. Employees who are depressed miss more workdays and tend to have difficulty in concentrating. Workers who are depressed may also have more accidents, are more likely to use drugs and alcohol and often have trouble in working collaboratively with others. And also it represents a huge cost in terms of both human distress and impaired economic performance. Besides the serious effects on worker's mental and physical health, the impact of work stress is obvious in 'organizational

symptoms' such as high levels of absenteeism and labour turnover, poor safety performance, low employee morale, a lack of innovation and poor productivity. So the present study was undertaken to investigate the relationship between occupational stress and the workplace depression.

In understanding personality, it is important to comprehend the roles played by traits and situational factors, and to know about the relations among them. In general, stress appears to have a negative impact on performance, although in some instances this is not the case. Among important sources of stress on individuals are role conflict and ambiguity, rotating shifts and sick organisations. Individual characteristics also affect stress responses. External sources and personal traits interact to produce stress reactions in individuals, including emotional and physical symptoms and performance deficits. Experience of hostility and stress are related to one's personality make up and how they perceive and approach their problems. Hostility can lead to undesirable consequences for the individual with prominent tendencies toward this negative emotional valence, specifically, hostility is an emotion in which an individual is seen as being in opposition to others and the feeling is that problems in the individual's life are due to others interference (Biji and Jayan, 2005) stress is viewed as an association between person and environment and appraised by the person as taxing or exceeding his or her resources and as endangering well-being. Nature and characteristics of job pose a threat to the individual. Hence this study is also investigating occupational stress, hostility and depression in relation to personality dimensions.

It is generally observed that women face mental health problems more frequently. Daver (1995) found that mental illness is higher in women rather than in men. This further analysis suggests that, house wives exhibited psychiatric symptoms more than employed women.

Marriage and family have been identified as important stressor causing mental illness among Indian women. Lack of intimacy with the husband, lack of privacy, death of confiding relationship, long term social and economic adversity, role strain or overload of role related functions and domestic and all kinds of violence against women have been identified as important psychological stressors affecting women's psychological well-being (Holmes and Raha, 1967).

Depressive symptoms are concerned which are more common in women than in men. In a review of the epidemiologic data on depression, covering 30 countries over a period of more than 40 years, it was found that few exceptions, depressions had a high prevalence and consistently more common in women than in men (Boyd, *et al*, 1982). The increased rate of major depression among women has sparked the curiosity of psychologists, and many explanations have been put forth. The changing role of women in modern age may also be regarded as the factor leading to high risk of depression in women.

Based on these findings the present study is exploring the depression among employed women and also to find out the predictors of workplace depression.

### **Statement of the problem**

The problem of the study is specifically reads as "Workplace depression: An analytical study"

Along with the **workplace depression** the present study was planned to explore the eastern dimensions of personality types such as: **inertia**

(*Tamas*), **activation** (*Rajas*) and **stability** (*satva*) (in short IAS dimensions of personality); **multiphasic hostility** and **occupational stress**.

### **Objectives**

1. To explore the personality dimensions, multiphasic hostility, occupational stress and workplace depression of nurses.
2. To study the nature and extent of relationship among dimensions of personality, multiphasic hostility and its sub variables, occupational stress and its sub variables and depression.
3. To identify those variables which can predicts occupational stress.
4. To identify those variables which predicts depression (depression symptomatology, clinical depression and severity of depression)
5. To examine the interaction effect of personality and job related demographic variables with multiphasic hostility, occupational stress and depression.
6. To examine the interaction effect of personality and hostility with occupational stress
7. To examine the interaction effect of personality and hostility with depression.
8. To examine the interaction effect of personality and occupational stress with depression.

## **Hypotheses**

The following general hypotheses have been formulated in accordance with the above objectives:

1. There will be significant relation among the dimensions of personality, Multiphasic hostility and its sub variables; occupational stress and its sub variables and depression (Depressive symptomatology, clinical depression, melancholia)
2. Occupational stress can be predicted by means of personality dimension of IAS and sub variables of multiphasic hostility.
3. HDI – Raw score (Depressive symptomatology) can be predicted by means of personality dimensions of IAS and sub variables of multiphasic hostility and occupational stress.
4. HDI – 17 score (clinical depression) can be predicted by means of personality dimension of IAS and sub variable of multiphasic hostility and occupational stress.
5. HDI – Melancholia (Severity of Depression) can be predicted by means of personality dimensions of IAS and sub variables of multiphasic hostility and occupational stress.
6. There will be significant interaction between the classificatory factors (personality dimensions and demographic variables) in overall multiphasic hostility and its sub variables.
7. There will be significant interaction between the classificatory factors (personality dimensions and demographic variables) in overall occupational stress and its sub variables.

8. There will be significant interaction between the classificatory factors (personality dimensions and demographic variables) in 3 types of HDI-scores.
9. There will be significant interaction between the classificatory factors (personality dimensions and hostility) in 3 types of HDI-scores.
10. There will be significant interaction between the classificatory factors (personality dimensions, hostility and stress) on 3 types of HDI scores.
11. There is significant difference between low and high stress groups on 3 types of HDI scores.

### **Descriptions of variables under the study**

#### **IAS Trait conceptions**

According to Mathew (1997) ancient Indian thought, particularly samkhya yoga, speaks of three qualities in all nature Inertia (*Tamas*), Activation (*Rajas*) and Stability (*Satva*). An individual's mind can be described and differentiated from mind of other people in terms of the extent to which it has these three components.

Stability generally involves maximum capacity with minimum of desire, dependence of involvement (in the matter of sex or any other activity of work). Inertia involves minimum capacity with wishful thinking. Activation is medium capacity with maximum desire and egoistic effort of indulgence (Mathew, 1997). According to samkhya concept, the sum of the three qualities is always a constant; differences are in terms of the relative strength of the three components.

The three components of personality are mutually exclusive. Interest in being alone is different from inability to mix with others. Similarly

effective action is not the same as impulsivity. Modern concept of introversion involves a mixture of inertia and stability and the concept of extraversion include activation and stability.

### **Inertia**

Root fear (death or survival anxiety, existential insecurity) at this level or type of personality as accompanied by defensive non-awareness or inhibition. Inertia is introverted instability of proneness to develop introverted type of maladjustment under stress.

This is characterised by lethargy, laziness, fear, inhibition, anxiety, shallowness of emotions, low initiative, low self-confidence, low self concept etc. People having a large degree of inertia lack energy; they are slow, late, not venturing, shy with drawn, weak willed, suggestible submissive, masochistic, intropunitive and so on.

They are unable to refuse, assert, or argue individually, but are collectivistic and show hysteric collective aggression. They show blind conformity and inability to mix with strangers. They do not have strong emotional ties. The strong emotion they show is fear. They believe in fate and luck (usually external locus of control) and are superstitious.

### **Activation**

This is characterised by restless over activity, controlled energy, high drive, and inability to remain alone or silent. Activation is extraverted instability or proneness to develop extroverted type of maladjustment under stress.

Persons having high activation are compulsive mixers, impatient, hasty, risk taking, rash, adventurous, analytical etc. They recognize admire

and encourage excellence in others and allow others to keep the benefits and earning as rightful effort.

They have high degree of practical intelligence. They value power, are autocratic, need rigid external moral control, have moral conflicts and so on. They believe in self effort and freedom of will (usually internal locus of control).

### **Stability**

Stability is characterised by high self-awareness, sensitivity, freedom, flexibility and control. Stability is stress tolerance and freedom from maladjustment tendencies.

Persons having a high degree of stability can be fast or slow, can work or rest as they choose or as situation demands. They can be very sociable or be alone with equal ease. They can assert if they want to do. They are wise, mature and intuitive. They are creative, self actualising, holistic, balanced, even tempered and dispassionate (Mathew, 1997).

### **Personality and psychopathology**

An individual facing immediate stress, which he cannot handle through normal means, tends to break down into a defence in line with his root personality (IAS pattern). Surplus energies of unfinished or interrupted sequences and cumulative tension resulting from immediate pressures seek outlets in line with the personality pattern of the person. Imbalances and incongruities in development or growth (for example, some aspects promoting stability while others promoting inertia or activation) also create distress. These also can be regarded as arrest of the general sequence of personal growth.

An extreme mental process (accompanied by the corresponding brain process) when prolonged, requires the opposite for balancing out or release, similar to the mechanism of after images in perception. For example, a prolonged manic state automatically leads to a depressive phase. Similarly, Catatonic withdrawal needs release through Catatonic excitement. Extreme inhibition requires some form of hysteric excitement for release (Mathew, 1999)

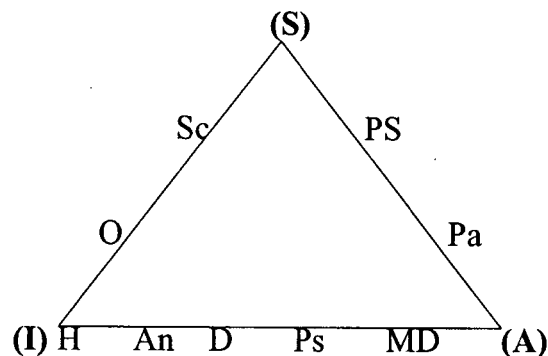
The mind-body system, at any point of time seeks out the defence or outlet or least cost. People with a high degree of inertia have recourse to hysterical mechanisms. They can easily forget unpleasant incidents, and act like different persons in different situations to escape feeling guilty. These types of defences are not available to people with activation and certainly not for high stability people as they have more awareness and integration.

Manic type defences are characteristic of activation type persons while such defences are not available to people with high stability as they have more moral sense and self-awareness.

Stability types of persons often convert stressful situations into growth-promoting experiences because of their stress tolerance and capacities for adjustment.

The hypothetical positions of the different psychiatric syndromes as primary defence on the IAS triangle are given in the following figure

**Fig. 1.1.1 Psychiatric syndromes as primary defence**



- |                |                       |                          |
|----------------|-----------------------|--------------------------|
| H - Hysteria   | PS - Psychopath       | Pa - Paranoia            |
| An - Anxiety   | MD - Manic-Depressive | PS - Psychosomatic       |
| D - Depression | M - Mania             | Sc - Schizophrenia       |
| S - Stability  | I - Inertia           | O - Obsessive compulsive |
| A - Activation |                       |                          |

The figure represents the primary types of defensive maladjustment in each position. The position of schizophrenia in the figure can be particularly misleading. It should be borne in mind that even people with other root personality combinations may develop schizophrenia, if their more characteristic primary defences fail.

### **Hostility**

The word hostility means being antagonistic or showing enmity. It may take in the form of direct attack to the enemy or resentment. Buss (1961) defines hostility as an implicit verbal response involving negative feelings and negative evaluations of people and events. It is basically implicit in nature, consistency of perception, categorization and evaluation of past attacks on oneself, rejections and deprivations. The person to whom hostility is directed is the one who is believed to be the thwarting agent or the one who threatens the valued standards.

In this study the concept of 'multiphasic hostility' is used and for the measurement, the test was also developed based on this concept. The detailed elaboration of the term and ideas are given in the chapter IV.

## **OCCUPATIONAL STRESS**

Occupational stress refers to the individual's mental state aroused by a combination of job situation perceived as preventing the demands which threaten to exceed to employee's capabilities and resources for adequately meeting it, under conditions where he/she expect a situation differential in the costs and rewards from meeting the demands versus not meeting (Cooper, 1976).

Beehr and Newman (1978) outlined three categories of symptoms that occur under conditions of occupational stress: Psychological symptoms, physical health symptoms and behavioural symptoms.

**Psychological Symptoms:** are those emotional and cognitive problems that occur under conditions of job stress. It includes depression, anxiety, boredom, frustration, isolation and resentment. A worker who finds himself/herself increasingly frustrated by job conditions may become depressed and withdrawn, and therefore is less able to cope with job problems.

**Physical symptoms:** One of the most common physical health symptoms of job stress is cardio-vascular disease. There is also an established link between job stress and gastro intestinal conditions, such as ulcers. Other physical symptoms are allergies, skin diseases; sleep disturbances, headaches and respiratory diseases etc.

**Behavioural symptoms:** Occur in two categories. The first are symptoms that can be said to 'belong' to the worker. This group includes behaviours

such as avoidance of work, increased alcohol and drug use, over eating or under eating, aggression towards co-workers or family members and interpersonal problems in general. Other behavioural symptoms 'belong' to the organization like absenteeism, leaving the job, accident proneness and loss of productivity.

## **Depression**

A depressive disorder is not the same as passing blue mood. It is not a sign of personal weakness or a condition that can be willed or wished away. People with a depressive illness cannot merely "pull themselves together" and get better. Without treatment, symptoms can last for weeks, months or years. Not every depressed person acts the same, but there are common symptoms for depression including, persistent sad mood, feelings of hopelessness, pessimism, other negative thoughts, guilt or worthlessness, feeling that nothing will ever get better, loss of interest in activities that were once enjoyed, increased lethargy, anxiety, sleep disturbances, changes in appetite or weight (sudden weight loss or gain), irritability and difficulty in concentrating, withdrawal from friends and family, persistent physical symptoms, such as headaches, digestive disorders or back pain, thoughts of suicide etc.

## **Workplace depression**

A person suffering depression – often a top performer, loyal employee and good friend among job peers and supervisors alike – may exhibit behaviours that mimic bad or negative attitudes. But it is the symptoms of their disease. Workplace depression can affect worker's productivity, judgement, ability to work with others and overall performance. The inability to concentrate fully or make decisions may lead to costly mistakes or accidents. In addition, it has been shown that that depressed individuals have

high rates of absenteeism and are more likely to use drugs and alcohol, resulting these problems like high turnovers, poor work quality, morale problems etc.

### **Nursing profession**

Nursing has a significant effect on people's lives. As rapid change continues to transform the profession of nursing and the health care system with which it is intricately linked, nurses embrace broader opportunities to influence human well-being. Today, nurses bring knowledge, leadership, spirit, and vital expertise to expanding roles that afford increased participation, responsibility and rewards.

Florence Nightingale (1969) defined nursing as "the act of utilising the environment of the patient to assist him/her in their recovery".

Nursing is both an art and science involving the total patient, as promoting spiritual, mental and physical health; stressing health education and preservation, ministering to the sick, caring for the patient environment and giving health service to the family, the community and the individual (American Nurses Association, 1973).

From the above definition it is seen that nursing includes a wide range of activities. Full time work in giving care to patients at the bedside either in the hospital or at home, another may teach the prevention of illness or promotion of good health in the community, another may teach nursing students, another may function only in the operating theatre, another may work only in administration or supervision of others who teach or give patient care, and another may even function fulltime in doing only research that will improve nursing practices and increase available scientific knowledge. (Zwemer, A.J, 2001).

# INTRODUCTION

Biji Mathew “Workplace depression: An analytical study” Thesis. Department of Psychology , University of Calicut, 2007

19-A

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*Chapter II*

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*Review of Literature*

The review of related studies is an important aspect of any research study. The present chapter provides a brief review of literature relating to the main themes under consideration. It also provides a framework for establishing the importance of the study.

In 1973, Good said that the key to the vast storehouse of published literature may open doors to some of significant problems and explanatory hypotheses, and provide helpful orientation for definition of the problem, background for selection of procedure and comparative data for interpretation of results. In order to be truly creative and original one must read extensively and critically as a stimulus to thinking (cited in Mc Burney, 2001).

Review of related studies avoids duplication of work that has already been done and it helps the investigator to study the different sides of the problem.

The review materials collected is presented herein under categories which are given below:

- (i) Occupational stress.
- (ii) Occupational stress and its effects.
- (iii) Occupational stress and work related factors.
- (iv) Occupational stress and personality.
- (v) Gender and occupational stress.
- (vi) Hostility.
- (vii) Personality and hostility.

- (viii) Hostility and stress.
- (ix) Hostility and depression.
- (x) Depression.
- (xi) Stress and depression
- (xii) Depression and personality
- (xiii) Depression in the work place.

### **Occupational Stress**

A comparative study of occupational stress among African American and White college and University faculty members in U.S. institution by Smith and Witt, 1993 suggests that the African American Faculty report generally higher levels of occupation stress than their White counterparts, especially in the areas of research and service activities.

A cross-sectional research conducted by Furnham in 1997. The study involved 134 workers indicating their levels of agreement with a series of statements about stress at work. Respondents emphasised the behavioral consequences of occupational stress (eg. impaired productivity and performance) more frequently than psychological strains, although anxiety, depression and fatigue were also highlighted. A number of what Furnham termed "intra-individual" factors (such as will power), and "inter-individual strategies" (such as seeking professional help) were cited as the most effective ways of managing workplace stress.

Occupational stress has been recognised as a major health issue for modern work organizations. Conditions of the workplace have been shown to lead to negative emotional reactions, physical health problems in both the short term and long term, and counter productive behaviour at work. Perception of control plays an important role in this process, being associated with all of these variables. Evidence is growing that enhanced control at work

can be an important element in employee's health and well-being (Spector, 2002).

Pinikahana and Happell (2004) were conducted a study to measure the level of stress, burnout and job satisfaction in rural psychiatric nurses in Victoria (n=136). The findings indicated that a low number of rural psychiatric nurses suffered from 'high' level of burnout and the majority of nurses reported 'low level' of emotional exhaustion and depersonalisation scores. And on the personal accomplishment 87% recorded 'low score' and workload was the highest perceived stressor followed by 'inadequate preparation'.

Bidlan (2005) examined semi-skilled workers from small and large-scale industrial units of Haryana, on measures of job involvement, job frustration and occupational stress. Results suggest that small-scale industrial workers had significantly greater degree of job involvement and job frustration than large-scale industrial counterparts. And also found that job frustration and organizational stress correlate positively and significantly in both the groups.

The effects of cognitive appraisal on experience of occupational stress and relationship between job stress and consequent job and health strains were studied by Srivastava (2005) among technical supervision from transactional model perspective. It was found that low appraisal of demands and threats posed by stressful situations and high appraisal of available capability and resources mitigate the degree of stress. It was also noted that cognitive appraisal markedly modify the relationship of job stress and consequent stress.

Anaesthesiology is considered a stressful occupation. Morais *et al* (2006) studied the stress and burnout among Portuguese anaesthesiologists.

A cross sectional survey based on an anonymous questionnaire was sent to all Portuguese anaesthesiologists registered by the Portuguese Medical Association and the study concluded that there are stress conditions and burnout amongst Portuguese anaesthesiologists was extremely high in the studied sample. Emotional exhaustion is partially explained by high perceived stress and low job satisfaction.

### **Occupational Stress and its Effects**

Stress at work resulting from increased complexity of work and its divergent demands has become prominent feature of the modern organizations extending impairing effects on employee's physical as well as psychological well-being. Though a moderate degree of stress has been noted and it has been found creating as well as promoting employee's inclination towards the job, excessive and consistent job stress results in job dissatisfaction, tension, anxiety, depression and in some cases even serious mental and physical disabilities ranging all the way to coronary diseases (Srivastava, 1991).

Reactions or effects of excessive work stress take an exacerbated form in some occupation. In service-oriented jobs, in which one is faced to constantly engaged in interpersonal dealings (which are also referred to as people-oriented jobs) a stage is reached when one starts feeling that enough is enough, the job has become impossible. This stage can be likened to the burnout effect. People working in hospitals, schools, banks, custom-oriented services such as those of an airhostess or flight purser, are more prone to such burnout effects. The chief cause of burnout is unrelieved work stress which results in emotional and/or behavioural and for physical exhaustion, lowered job productivity and increased dissatisfaction and pessimism at work (Veningar and Spradley, 1981).

(Other) Effects of stress at work are specifically related to the nature of the work being performed. First, and foremost are the effects on neuropsychological functions. While there is widespread resources of cardiovascular and gastro intestinal effects of stress, locomotor functioning is also effected. This is specially so in the case of occupational stress among people who are forced to use certain muscles more than others (such as typists, office workers and industrial workers). Along with muscular fatigue they suffer from stiffness of the back, neck and forearm, or what has been termed as the occupation neck-shoulder-arm syndrome. People suffering from this syndrome characteristically manifest not only the normal aches and pains produced by overuse, but also report clamminess of the hands, headaches, insomnia and secondary emotional complaints (such as depression). The central nervous system also affected in some cases. 'Minipanies' may be seen, which result from lapses of vigilance due to monotony (Agrawal, 2001).

Effects of stress can be clearly pinpointed observed and measured, emotional changes are highly subjective. One can experience them, but one cannot express them in words. Often a person may be seething with anger within, but maintains a cool exterior, clearly indicating that emotions are not always observable. These identifiable emotional constellations that are fairly regular outcomes of stress are anxiety, anger and depression. (Agrawal, 2001).

Popular press and many academic articles lend credence to the view that work stress is increasing. It is evident that the working environment is a major focus for stress research. According to a survey conducted by International Labour Organization, stress and accompanying depression in the workplace is now the second most disabling illness inflicting workers after heart disease (Varhol, 2000).

Both male and female yoga practitioners were less stressed and anxious as compared to non-yoga practitioners (Venkatesh, *et al*, 1994). Srivastava and Pandey (2000) examined the relationship between role conflict and tension among 100 university employees. Results revealed that though the correlation between role conflict and tension were not significant, employees scored high both on role conflict and tension.

Stress was found to be negatively correlated with the mental health of supervisors (Mishra and Somani, 1993) and teachers (Anand, 1996-97). Stress was negatively associated with quality of life among female clerks, doctors, and teachers (Daga, 1997). Stress was positively correlated with depression among male teachers of higher educational institutions (Mishra, 1995). Job related stress was high among employees who performed repetitive work as compared to those who were engaged in non-repetitive work. The former group also had poor mental health and lower esteem (Baran, Rahman and Sen, 1999).

Verma, *et al* (2002) explored the mental health status and occupational stress among army and air force personnel. 80 air force and 90 army personnel were participated in the study. And it was observed that 30 army (33%) and 26 air force (32.5%) are poor in mental health. These 56 cases with poor mental health were again subjected to occupational stress inventory and the results revealed that among the army personnel with poor mental health status, the majority used poor coping skills and experienced high occupational stress.

### **Occupation Stress and Work Related Factors**

According to Hackman and Oldham (1975), creative traits not only cause stress among creative managers but also make them like risk, insecurity and independent thoughts and actions. Second they noted that many of the

coping strategies for creative managers aim at reducing interpersonal conflicts because their emotional sensitiveness, mental complexities and novelty of ideas are a major source of stress. They reviewed some studies done abroad confirming the view that the problem of mobilizing social and political support are the major stressors for creative individuals.

In a comparison of personal and professional stressors experienced by Indian and American executives working in banks, textile mills, pharmaceutical, engineering, petrochemical and electrical industries it was found that professional stressors were similar in both countries. However, personal stressors were different in both countries and Indian executives experienced more personal stressors (Batlivala, 1990).

Similarly, a comparison of Indian and American female clerical employees revealed that the source of stress among American clerks was lack of control autonomy whereas among Indian it was lack of structure and clarity of task (Narayanan, Menon and Spector, 1999).

Job related strain was positively related to strenuous working conditions, role overload and role conflict among junior management officers. (Chand and Sethi, 1997). The length of tenure among teachers was positively correlated with stress (Akhtar and Vadra, 1990). Professionals in various fields who perceived higher social support were less affected by the stress experienced at the workplace. (Banerjee and Gupta, 1996; Singh and Srivastava, 1996).

Role related stress was negatively correlated with quality of work life and socio political alienation at the workplace in general (Ahmad and Mehta, 1997) among middle level managers/superiors of both private and public sector organizations. Overall role related stress was correlated positively with despair, normlessness and meaninglessness – all variants of alienation

(Sehgal, 1997). Perceived role stress was negatively associated with trust and positively associated with distrust among executives working in private and public sector organizations (Dwivedi, 1997).

Executives experience a variety of stresses, including role ambiguity, role conflict, role overload, personal inadequacy, resource inadequacy, role shrinkage, role stagnation and role isolation. Depending on the level of these stresses experienced by executives, they may be categorized as eustress and distress. The former is a moderate degree of stress and has a positive impact on work behavior and health. On the contrary, the latter is a high degree of stress and the executive may not be capable of managing it effectively. Hence, it adversely affects health and normal functioning. (Pestonjee, D.M., 1999).

Stress was found to be influenced by age, general ability, and personality factors among 200 male executives (Reddy and Ramamurti, 1991). Age was positively correlated with stress among 80 executives (Beena and Poduval, 1991). Role related stress did not differ with age among bankers (Chaudhary, 1990). However, stress levels were higher in the case of younger female teachers (Ushashree and Jamuna, 1990). There was a positive but non-significant relationship between age and role related stress among railway personnel (Pandey, 1997). Age had no significant impact on stress levels among male and female engineers (Deosthalee, 2000).

Male executives with masculine sex role orientation were higher on role stress as compared to female executives with androgynous sex role orientation (Aditya and Sen, 1993). Education was negatively correlated with stress experienced by engineers (Deosthalee, 2000).

Alienation and organizational frustration was high in private sector managers as compared to public sector managers. (Mishra, Bhardwaj and

Mishra, 1999). The opposite trend was observed by Mohan and Chauhan (1999) for middle level managers. The study reported that public sector managers were more stressed than private sector employees and they perceived the work culture as unsupportive.

Support for personal and professional development was found to moderate the relationship between job stress and organisational commitment (Vashishtha and Mishra, 2000). Further it was observed that robust integrated personalities (good mental health) moderated the relationship between occupation stress and job satisfaction (Mehra and Mishra, 1999). Hierarchical level also moderated the relationship between reported stress and job satisfaction (Jagadish and Singh, 1997). However, participation in decision-making and positive attitude towards working in groups attenuated the negative influence of occupational stress on job satisfaction among blue-collar industrial workers. (Mehra, 1993; Mehra and Mishra, 1993).

Mishra (1996) noted that the defensive style was the most frequently used coping style. Avoidance strategies were used more frequently than approach strategies by air traffic controllers. Srivastava and Krishna (1997) examined the relationship between approach and avoidance models of coping and mental health of 300 LIC employees. It was found that employees who predominantly adopted avoidance mode of coping manifested more severe symptoms of neuroticism and anxiety in comparison to those who frequently used approach coping strategies. Further, avoidance mode of coping was correlated positively and significantly with all the six dimensions of mental health. Kumar and Kulkarni (1996) studied stressors, strains and coping – strategies in a group of 35 Indian commercial pilots. Pilots used coping strategy of reading to increase knowledge/information most frequently, followed by exercise/relaxation techniques, trying to understand and analyse the problem logically, planning time management, and taking a vacation.

Job stress was negatively correlated with job involvement among 60 middle level hotel managers (Ahmad and Khanna, 1992) among executives working in a refinery (Jagdish and Singh, 1997), and among middle level managers working in various departments (Singh and Singh, 1997). Perceived stress was found to be also negatively correlated with job satisfaction among bankers (Chaudhary, 1990). Job stress was negatively correlated with organizational commitment (Pattnayak, Panda and Mohapatra, 1999). A negative correlation was found between organizational commitment and stress across all managerial levels. (Pant and Bhardwaj, 1992).

Siegrist and Colleagues (Siegrist, *et al*, 1990) have developed an alternative two factor model of work stress that directly incorporates motivation and which emphasises the relationship between effort and reward. Both these models were compared in a prospective study (Whitehall II) of British civil servants, where an imbalance between personal effort (defined as competitiveness, work related over commitment and hostility) and rewards (poor promotion prospects and career obstacles) was associated with greater risk of ill health.

Position within the organizational hierarchy influenced perceived role stress among 50 each of top and middle level managers and 50 workers. Middle level managers perceived greatest role in stress, workers were in the middle and top-level managers perceived least role related stress (Srivastava, Hagtvet and Sen, 1994). There were no differences in role related stress among assistant, associate and full professors of various colleges of Rajasthan (Joshi and Singhvi, 1997). In another study Raju and Madhu (1994) noted that top-level managers reported lower role ambiguity and role stress as compared to middle and junior level employees of a public sector organization.

Grover and Sen (1994) observed that managers experienced less job stress as compared to supervisors. Similar results were obtained by Pattnayak (1993). Pattnayak, Panda and Mohapatra (1999) noted that non-executives experienced greater stress compared to executives working in a large public sector steel plant. Executives and supervisors differed significantly on inter role distance, role overload, personal inadequacy, and role ambiguity (Satynarayana, 1995). Mukherjee (1997) reported that junior level bank managers perceived higher role related stress as compared to senior level managers. Pattnayak and Mishra (1997) observed the same trend for women executives and assistants working in public sector firm; assistants – experienced greater role related stress than executives. Another study found that workers perceived greatest role stress as compared to middle managers, where as top level managers perceived lowest stress (Jha, Mishra and Bhardwaj, 1994) Pant and Bhardwaj (1992) measured executive stress and its correlates among public sector managers across three levels – top, middle, and lowest. Top-level managers were workaholics, experienced a high degree of stress, and had inadequate coping ability. In addition, among middle level managers, organizational commitment was negatively correlated with effective coping and chronic work related stress.

Junior level scientists reported greater stress than senior level scientists (Roy, 1997). Cabin attendants reported greater role related stress than pilots despite the fact that pilots were higher on trait anxiety (Barnas, 1992b), Railway guards manifested greater anxiety and stress, and lower health status as compared to railway motormen (Barnas, 1992a). Guards also experienced greater stress than railway engine drivers (Sayeed, Alan and Ansari, 1998). Clerical level users of a video display unit were more stressed than those at the managerial level (Arora, 1994). Karrir (1998) examined differences in the perception of quality of work life (QWL) across managerial levels, across private, public, and co-operative sectors. The results indicated that top level

managers had higher QWL than middle and lower level managers. Moreover, public sector managers reported higher QWL than their counterparts in the private and co-operative sectors.

Maximum role stress was observed in relation to the dimension of role erosion among college professors. Role erosion, self-role distance, resource inadequacy, role isolation, and role expectations were significant contributors to stress among executives (Srivastava, 1997). Further, role erosion and resource inadequacy contributed to the stress level of executives and supervisors working in a public sector organisation (Satyanarayana, 1995). Also, role erosion, resource inadequacy, and inter role distance were dominant contributors to role stress among 222 executives – working at all levels in a public sector organization (Seghal, 1997). Role erosion and resource inadequacy were dominant contributors to role stress among bank officer (Chaudhary, 1990). Maximum role stress was experienced in relation to the dimensions of rule erosion and role isolation among bankers (Mukherjee, 1997). In a study railway guards reported that they were facing work overload, unable to participate in decision-making and felt powerless which in turn lead to higher stress levels (Sayeed, Alam, and Ansari, 1998).

Majority of the scientists reported moderate to low stress (Savita and Asnani, 1998). A moderate level of stress was observed among women doctors, teachers, bank officers and bureaucrats (Gaur and Dhawan, 2000). Executives were found to be more stressed than physicians, especially to the area of role insufficiency (Ghosh, 2000). University teachers are less stressed than that of back managers (Barkat and Parveen, 1999). Employees of administrative organizations reported greater stress than those working in financial organisation at the same level in the hierarchy (Sahoo, Mohanty and Bhakat, 1995). Nurses perceived more work stress than lectures but did not express more personal strain (Orpen, 1996).

In a comparison of role stress experienced by officers and school teachers, it was found that teachers experienced least role stress (Pareek and Mehta, 1997). Similarly Mishra (1996) reported that female teachers experienced greater role related stress, inter personal stress and work overload as compared to their male colleagues.

Gynaecologists and paediatricians were more stressed, emotionally exhausted and reported higher feelings of depersonalisation as compared to surgeons and medicine specialists (Jagadish and Reddy, 2000). Rani Lakshmi and Mishra (2001), in a study of doctors and nurses, observed that profession had a significant effect on the experience of several facets of occupational role stress, namely, role expectations effect, role erosion, role overload, role isolation, personal inadequacy, self role distance, role ambiguity, and role inadequacy.

Desai (1993) identified the differential response profiles of three levels of management on measures of stress and mental workload. The relationship between stress and mental workload was also examined. Upper and middle levels of management experienced higher stress and mental workload as compared to lower level managers. Perceived effort was main contributor to stress. Perceived effort was positively correlated with Type a personality, job involvement, and hard driving behavior in the case of upper level managers. For middle managers, perceived effort was positively correlated with Type A personality, speed and impatience, and hard driving (competitive) behavior. For lower management levels, perceived effort was significantly correlated to all the four dimensions – Type a personality, job involvement, speed and impatience, and had driving behavior. Personnel in the technical departments experienced less stress than those in the commercial departments.

Organizational stressors contributed to the largest difference between high and low stress groups among bank employees. There were no significant

differences in the stress perception of officers and clerks, married and unmarried personnel, males and females (Rajeshwari, 1992). The number of dependents was positively correlated with role related stress among female nurses (Akhtar and Vadra, 1990).

Mathew (1995) observed that police personnel reported career development uncertainties, death of colleagues, threat of personal injury, unofficial work as directed by the boss, poor personnel policies, dangerous work duties as contributing to high stress levels. Like the police personnel, pilots also reported that lack of career growth opportunities, inadequate and unsafe working conditions, and lack of management support were the major contributors to the stress experienced by them (Kumar and Kulkarni, 1996). Inter role distance and resource inadequacy were the dominant contributors to role stress among air traffic controllers (Mishra, 1996).

Misra (1998) and Pestonjee (1995) noted that overall role stress among doctors was moderate. However, role erosions, role stagnation, self-role distance and inter role distance were experienced much more than role ambiguity and role overload. On almost all measures nurses were found to be more stressed than doctors (Rani Lakshmi and Mishra, 2001).

Role erosion, role stagnation, self-role and inter role distance contributed to perceived stress among 30 police officers (Mathur, 1994). Another study on policy professionals by Singhvi and Mathur (1997) observed that role erosions and inter role distance were the most dominant where as role ambiguity and role overload were the least dominant contributors of role stress.

In a study of (Searle *et al*, 1999) the 3-factor model of occupational stress, which predicts that job demands, job control and social support influenced levels of strain. Stress was found to be higher and perceived

performance was lower in condition of high demand; this pattern was also observed in conditions of low social support. Task control did not affect stress and the manipulation did not interact to produce elevated stress. Work preference measures indicated that the level of fit between ideal and actual social support influenced stress and perceived performance.

Tyagi and Sen (2000) found that female managers were more stressed than male managers, and supervisors were more stressed than executives irrespective of gender. Male engineers experienced more stress than female engineers (Deosthalee, 2000). Chattopadhyay and Dasgupta (1999) did not find any significant difference in the perceived role stress among single and married female executives. The level of stress among video display terminal users in the newspaper industry was higher than among non video display terminal users (Singh, 1993). Similarly, it was also observed that video display terminal users were more stressed, anxious and fatigued than non-users (Arora, 1994). Employees of nationalised banks reported lesser burnout but higher emotional exhaustion than those of scheduled banks (Tewari, 1995).

Managers/supervisors who were stressed were more likely to perceive the appraisal as unfair and inappropriate (Desai and Daftuar, 2000). The effects of role stress, organizational climate and ego strength on psychological strain (as measured by environmental frustration, anger reactions, latent hostility and job anxiety) in middle level managers were studied by Singh and Singh (1992). Managers who experienced high organizational role stress reported more environmental frustrations, anger reactions, and job anxiety than managers who experienced low stress. Managers who perceived the organizational climate as more conducive scored significantly lower on job anxiety than those who perceived the climate as less conducive. Managers with high ego strength scored lower on environmental frustration, anger

reactions and latent hostility and significantly lower on job anxiety than managers with low ego strength.

In Europe, occupational stress is considered as a risk-assessable disease. Recent high-profile litigation cases have raised awareness of the risk posed by workplace stress. Whilst legislation provides guidelines for the risk assessment of physical hazards, there remains little guidance for employers concerning occupational stress. It is suggested that a risk management approach is both information and cost effective. High risks, which may require more expensive organizational development solutions, can be differentiated and prioritised from lower risks, which may be effectively controlled through stress management or Employee Assistance programmes. (Clarke and Cooper, 2000).

Pandey and Srivastava (2000) evaluated the role of job category, family type and job tenure in work stress, coping, and illness. The sample of job category includes teachers, bank and railway clerks of 240 career – oriented females. The study concluded that, there is significant main effects of job category, family type, and job tenure on work stress. As far as physical illness was concerned, job category and job tenure, but not family type had a significant influence, where as job category and family type, but not job tenure had significant impact on the psychological health of the respondents. Groups differed significantly on various dimensions of coping responses related to active, adaptive, and maladaptive styles.

A two-day yoga based stress management programme helped in lowering the breathing rates of those who had obtained high occupational stress scores. However, the programme does not benefit those where stress scores were below the median (Vampati and Telles, 2000).

Review of research on occupational stressors and strains amongst academics working in UK Universities, (Kinman, 2001) suggest that, in comparison to other professionals and community samples, academic staff experience less job satisfaction and extremely low levels of psychological health.

Upadhyay and Sing (2001) compared the occupational stress levels experienced by college teachers and higher secondary school teachers among the 40 teachers, so in each of the two groups. And it found that significant differences between the two groups on variables related to role overload, role ambiguity, and responsibility, under participation, powerlessness, poor and peer relations and unprofitability.

In recent years, the Australian University sector has undergone large scale organizational change, including restructuring down sizing and government funding cuts. At the same time research from across the globe reports an alarming increase in the occupational stress experienced by university staff. The first phase of a longitudinal investigation of occupational stress. A total of 22 focus groups were conducted with a representative sample of 178 academic and general staff from 15 Australian universities. The group's focused on understanding staff's experience of occupational stress, and perception of the sources, consequences and moderators of stress. Both general and academic staff reported a dramatic increase in stress during the previous 5 years. As a group, academic staff reported higher levels of stress were identified including: insufficient funding and resources; work overload; poor management practice; job insecurity; and insufficient recognition and reward. The majority of the groups reported that job related stress was having a deleterious impact on their professional work and personal welfare. (Gillespie, *et al*, 2001).

Some degree of occupational stress is common to every organization at various levels of its hierarchy. The police organization is no exception to this rule. Rather policing is widely recognised or more stressful than most other occupations. Few researchers have tried to investigate the problem of police stress in India. Present study (Siwach, 2001) is an attempt in the same direction. The present endeavour was planned to explore the possibility of the existence of police specific stress and burnout stress syndrome among police personnel. 300 police personnel were selected from various north Indian states. It was also intended to investigate whether there are difference in the extent of police specific stress and burnout stress syndrome amongst the police personnel working at different levels of police organization. Findings clearly indicate that the police officials are under stress and it is increasing with the organizational hierarchy and only a small number of officials have reported high level of burnout.

Sing *et al*, (2001) explored the relationship between role stress and role efficacy and their moderating influences on organizational effectiveness at two levels of the organizational hierarchy. The sample of 96 upper middle, middle, and junior managers (average age 38.9 years) and 224 supervisors (average age 42.3 years) of a public sector agricultural organization in Delhi. Supervisors experienced greater amount of role stress and perceived role efficacy than managers. However, on most of the role efficacy dimensions there were no significant differences. No differences were found on the experiences of organizational effectiveness. Role stress and role efficacy were inversely related, and both moderated the experience of organizational effectiveness to varying degrees at the two hierarchical levels.

Occupation stress has been recognised as a major health issue for modern work organization (Spector, 2002). Conditions of workplace have been show to lead to negative emotional reactions (eg: anxiety), physical

health problems in both the short term (eg, headache, or stomach distress) and the long term (cardiovascular disease), and counter productive behavior at work. Perceptions of control play an important role in this process, being associated with all of these variables. Evidence is growing that enhanced control at work can be an important element in employees health and well being. These relationships can be understood in the context of the control-stress model.

Srivastava and Sing (2002) examined the relationship between job and life stress and health outcomes of management personnel among the sample of 200 male managers. Psychosomatic health complaints (PHC), Pathogenic health habits (PHH) and data on blood pressure (BP) were also collected. Job stress was significantly related to PHC and PHH. As compared to job stress, life stress was found to be a stronger predictor of health outcomes. Life stress was significantly related to higher systolic BP, PHC and PHH.

Many studies have shown high levels of stress in doctors, teachers and lecturers. Rutter *et al* (2002), explored the relationship between a teaching role and stress in doctors and dentists who teach. A large number of factors are implicated including low autonomy, work overload, and lack of congruence between power and responsibility. Working as a doctor or dentist may entail higher levels of stress than are experienced by the general population. In some situations adding in the role of teacher reduces this stress.

Bhatia and Kumar (2003) were made in attempt to explore in-depth relationship between total occupational stress pattern with its twelve components and three syndromes of burnout emotional exhaustion, depersonalisation and reduced personal accomplishment among supervisors and below supervisor rank staff (N=80). And the findings indicated that occupational stress was positively correlated with emotional exhaustion and

depersonalisation syndromes of burnout among supervisor as well as below supervisor rank staff, showing that high stress resulted in emotional exhaustion and depersonalisation in both the groups. Where as negative relationship was obtained between occupational stress and personal accomplishment only in the case of supervisor staff, showing that the high occupational stress from different sources experienced by the supervisor level staff resulted in reduced personal accomplishment.

To explore the effect of job autonomy upon occupational stress among 300 managers from various private sector concerns of Agra, Delhi and nearby cities of Agra. Das and Singhal (2003) concluded that there were significant difference between the stress scores of managers with high job autonomy and those with low job autonomy. The managers with high job autonomy show less stress as compared to managers with low job autonomy. However there were no significant difference between the stress scores of managers with low job autonomy and managers having moderate job autonomy.

Teaching school is highly stressful occupation. Research on teacher stress and burnout has largely focussed on environmental and contextual factors. While ignoring personality characteristics of teachers that may have an impact on relationship between job stress and its consequences. On the study of Mearns and Cain (2003) showed that higher stress on the job did indeed predict greater amount and distress. Negative Mood Regulation (NMR) expectancies predicted less burnout and distress, independent of stress level and coping.

Vashishtha and Mishra (2004) studied the relative contribution of social support and occupational stress to organizational commitment of 200 supervisors. The results revealed that social support and occupational stress significantly predict the degree of organizational commitment of supervisors.

Mehra and Mishra (2004) investigated to explore the potential moderator effect of autonomy on the job satisfaction, occupational stress relationship among the sample of 250 blue-collar industrial workers of "UPTRON INDIA LTD" in Lucknow. The moderated regression analysis confirms that autonomy area of participation does not have moderating effect on the job satisfaction – occupational stress relationship.

Bhowon and Kion (2004) examined the relationship of perceived organizational climate and stress. Seven dimensions of organizational stress and climate were extracted through varimax rotated factor analysis. Experience of inequity, role overload, and inadequacy of role authority emerged as strong dimensions of stress, whereas job difficulty and lack of group cohesiveness were weak dimensions of stress. The study concluded with that significant relationship between dimensions of stress and climate indicating that employee's perceptions of the organizations structure and processes determine stress experience.

Coping styles influence levels of stress. This study examines how workers cope with hazards at work and whether unions help workers cope more effectively with those hazards. Baugher and his colleagues (2004) surveyed 237 workers at a chemical plant in Louisiana and found that perceived exposure to fire and explosions at work increased workers' levels of anxiety. Problem focussed strategies to cope with these potential risks reduced anxiety and depression. Aside from supervisory or managerial authority, which is not available to most workers, we found that only one factor effectively moves workers who are in subordinate positions to actively cope with hazards: membership is an independent labour union. These findings suggest that union growth could indirectly reduce job stress by giving workers the voice to cope effectively with job hazards.

Dillenburger (2004) studied the causes and alleviation of occupational stress among social workers who are doing services in family and child care. The findings showed that social workers experience more occupational stress than would be expected in the general populations. Consistent with a demand-control support model, this was mainly caused by high work loads high staff turnover and insufficient leadership and support.

Occupational stress is associated with specific situations, characteristics of the work environment and individual perception and reactions in the context of the workplace. Nursing is acknowledged as a stressful occupation whose stresses are generally associated with the job itself, while the effects of personal characteristics on an individual's response to occupational stress are dismissed. Stacciarini and Troccoli (2004) found that occupational stress was directly associated with state of health, and inversely associated with global constructive thinking and job satisfaction. Constructive thinking was significantly related to psychological health, occupational stress and physical ill-health highlights a need to value individual coping styles in the work environment.

Restructuring, use of short-term contracts, external scrutiny and accountability and major reductions in funding are making a drastic change among the staff of UK's higher educational institutions. Tytherleigh, *et al*, (2005) found that the most significant source of stress for all higher education staff was job insecurity. And also reported, significantly higher levels of stress at work relating to work relationships, control, resources and communication and lower levels of commitment to their organization.

Ryan *et al*, (2005) identified work-related stress is a significant impediment to job satisfaction and healthy psychosocial functioning. It can alter the behaviour of the person involved and impair the quality of life. Over the last decade, work-related stress has been consistently identified as one of

the major workplace concerns – a challenge not only to the health of working people but also to the healthiness of their organizations.

Individual's beliefs in relation to job stress are likely to affect their perception and hence their work related actions. Kinman and Jones (2005) found between lay and professional discourses on work stress. Results indicate that lay representation of occupational stress are multifaceted. Utilizing semi-structured interview, little consensus was found in low participants interpreted the concept: a diverse range of personal, environmental, and societal factors were highlighted. The causes of stress at work were perceived as being predominantly organizational.

Sophie, *et al*, (2005) explored the source nature and direction of 'cross over' of occupational stressors and strains in a sample for 74 dual career couples. Research findings suggest that the direction of cross over is predominantly from men to their female partners, positive relationships were found between women's work stressors and the anxiety and depression reported by their male partners.

Stress has physiological, psychological and sociological dimensions. Psychological stress indicates affective, behavioural and psychological responses to aversive stimuli in the environment. When an individual will perceive the stressor, as threatening, he/she will mobilize their resources in an effort to eliminate or at least to reduce the effect of the stressor. The same stress will cause for different kinds of stress responses for different people and various forms of psychopathology may occur as a reaction to the same stress (Glass and Singer, 1977).

## **Occupational stress and personality**

Personality factors can exacerbate stressful reactions. The evidence comes from the work of the two cardiologists mentioned into type A and type B personalities.

Four main characteristics are considered important in Type A personalities:

- (i) Multiple behaviour patterns - the tendency to undertake two or more tasks concurrently; a consequence of this pattern is a failure to complete the tasks satisfactorily.
- (ii) Time urgency - tendency to habitually programme too much work into a limited period of time.
- (iii) Inappropriate aggression - hostility and competitiveness, Frequent displays of aggression are common, often response to minor provocation or frustration.
- (iv) Poorly defined goals - tendency to rush into work without defining objectives and the means by which these will be attained.

Type B patterns involve passivity as not being overly ambitious, restraint and not being prone to develop stress - related disorders (cited in Beech, *et al.*, 1982).

Chen *et al* (2003) explored the determinants of perceived sources of occupational stress among workers in the rapidly expanding Chinese off-shore oil industry. Using factors analysis, they identified nine sources of stress: interface between job and family/social life; career and achievement, safety management problems and relationship with workmates, physical environment of workplace, living environment, managerial role, ergonomics

and organizational structure. And better educated workers perceived more stress from the interface between their job and family or social life and career achievement, but less stress from ergonomics. Type A workers perceived more stress from career achievement and the living environment. Social support was significantly associated with four sources of stress. Workers from different job titles perceived stress from different sources.

Media reports frequently portray business executives as stress victims, and the more successful are managers, the more said to be under stress. Does this mean that every manager has to be stressed if he/she is to be successful. No need to wonder about it. Many managers who are busy and successful but seem to be in full command over their lives and are apparently very good stress copers? It appears that only some of them fall sick, while others managers to remain healthy. Researchers in their attempt to get an insight into this very interesting phenomenon have concluded that there is 'something' is the personality of these managers that keeps them healthy. More specifically, it is a factor called personality hardiness. This type of personality is found to be characterized by the three *Cs* - *commitment*, *challenge* and *Control*. Commitment is displayed by the interest that people show in their work; control is seen when people remain physically and mentally healthy even in the wake of stressful life events (Agrawal, 2001).

Singh and Kaur (2000) examined the association of motives, work values, and personality characteristics with promotional success (PS) among the 80 senior and 80 managers (mean age 40-12 yrs) Hierarchical and Correlational analysis revealed that intelligence, creativity, redicalism, decision making ability, self control, need for achievement, need for power and intrinsic work related values were positively associated work related values were positively associated with promotional success. Easy going, happy go lucky, and suspicious were negatively related to PS. Factor analysis

yielded five factors, three of these were promoters: decision making, achievement via power, and intrinsic values, and two were retarders: easy going and anxiety.

Certain personality variables were found to be positively associated with the experience of stress. For eg, Type A patterns of behavioral disposition is most associated with the experience of stress whereas Type B least associated with stress. Similarly open mindedness, need for independence, need for affiliation, and ego strength were found to be associated with experienced stress (Pestonjee, 1999).

Type A persons are target oriented, aggressive and cannot tolerate being looked down upon and, therefore, aim ever higher and higher. Where as in type B personality, the incompatibility may result in a conflict between parents and children causing continuous anger and irritation, or a condition of chronic stress (Agrawal, 2001).

Gupta and Sindhvani (2001) examined the type A behaviour pattern among officers and staff of three departments - engineering, commercial, and personnel of an airlines company posted at either the regional office or at the headquarters among 60 married employees (46 males, 14 females, mean age 41 yrs and 9 months). The results found that no significant main effect but significant department by rank and rank by office interaction effect suggesting that officers of the commercial department and staff of the headquarters exhibited more type A behaviour pattern than their respective counterparts.

Pandey (1998) studied the relationship between personality dimensions and organisational role stress in a public sector organization. There were no differences in the role stress of middle level managers, lower level managers and supervisors. The psycholicism-reality and neuroticism stability dimensions of personality were positively related to subject's perceived

organizational role stress (ORS). The extraversion-introversion dimension was negatively related to role stress.

Sharma, Sood and Spielberger (1998) investigated the correlations between occupational stress, anxiety, anger, and Type A behaviour among registered nurses (age 22-48 years) working in four state administered hospitals of Himachal Pradesh. Those with type A behaviour were highly stressed, more likely to repress anger, and manifested higher trait anxiety. Type A subjects reported greater affective discomfort than their Type B counterparts.

Ahmad, James and Ahmad (1991) examined the relationship between organizational role stress (ORS) and job satisfaction, and the personality dimensions of neuroticism - stability and extraversion and introversion among middle level managers. Results indicated that ORS was significantly but negatively correlated with all four factors of job satisfaction (nature of job, management, personal adjustment, and social relations). The neuroticism stability dimension of personality was significantly and positively related to six dimensions of ORS. Only one dimension of ORS, that is, role expectation conflict had a significantly negative relationship with extraversion - introversion.

The level of assertiveness of police officers was not related to the level of stress faced by them (Misra, 1997). Creativity was positively correlated with adaptation and stress among 55 middle level managers (Goklaney, 1993). No significant correlation was evidenced between problem solving style and occupational styles in a study of 150 executives of a government organisation (Panchanathan, Rajendran and Karuppiah, 1993).

Another study of male bankers reported that internal locus of control was correlated with role related stress in their role expectations, role overload,

and role ambiguity facets (Malik and Sabharwal, 1999). Role ambiguity was negatively correlated with external locus of control among university teachers (Joshi and Singhvi, 1997).

### **Gender and Occupational Stress**

Differences were found between reported occupational stress among public and private sector public relations officers. Higher stress was reported by public sector public relations officers (Misra, 1997). Similarly, bankers of non-nationalised banks reported higher stress levels as compared to those of nationalised banks (Aminabhavi and Triveni, 2000). Differences were found in role related stress experienced by male versus female school teachers working in general schools as compared to no gender differences in teachers working in special schools (Joshi and Singhvi, 2000).

Aditya and Sen (1993) examined the nature and extent of stressors faced by male and female executives in their job situation. The sample comprised 160 middle level executives with an equal number of males age (28-50 years) and females (age 27-50 years). It was observed that male executives who were predominantly masculine in their sex role orientation faced greater sex and anxiety in their job situation - than female executives who were predominantly androgynous in their sex role orientation. The two groups differed maximally in terms of role ambiguity, role conflict, interrole distance, future prospects, human relations at work, and femininity and masculinity dimensions. The findings were discussed in terms of greater reluctance to self-disclosure among males and different socialisation patterns specified for both men and women in Indian society.

Tharakan (1992) found that professional working women experienced greater work related stress than non-professional working women. Also, occupational stress and job satisfaction were significantly correlated with the

professional qualifications of women. Sekhar (1996) found that the type of hospital differentially affected the experience of job stress and job burnout among female nurses. The number of patients that were assigned also significantly affected the nurse's helplessness, depersonalisation experiences, and personal accomplishment. Daga (1997) found that quality of life was correlated negatively but significantly with social and family role stress among female clerks, doctors and teachers. Further, quality of life was associated positively and significantly with social support among clerks and teachers.

Mathur and Singhvi (1997) examined the relationship between organizational role stress and organizational ethos among 400 women in four professions, viz., doctors, school teachers, college teachers, and bank employees. All the women were high on proaction and openness dimensions. Doctors, college teachers, and bank employees were also high on collaboration and experimentation. In the case of all the women, inter role distance and role overload were positively associated with confrontation and experimentation dimensions. Role stagnation was correlated significantly with all the dimensions of organizational ethos.

Kumar and Murty (1998) observed that the most frequently experienced stressors among women managers were office politics, followed by conflict between work and home, community to the workplace, lack of opportunity and challenge at the workplace, and problems related to child care. The major strains experienced by women managers were anxiety, tension, fatigue, lack of concentration, irritation and physical health problems. Further the most frequently used coping strategies were talking with spouse/friends/ parents/supervisors/colleagues about the problem, followed by efforts to increase knowledge/information, physical withdrawal from the

situation for a while, pursuing socio cultural religious activities, and doing physical exercise/ yoga/meditation.

Today, women have joined hands with men in the workforce in the organization. This in turn leads a number of role stresses among working women. Rastogi and Kashyap (2001) find out the relationship between occupational stress and mental health among married working women employed in different professions in teaching, nursing and clerical staff and it reveal that maximum occupational stress was found among nurses in comparison to clerks and teachers. A significant negative relationship between occupational stress and mental health is found.

Saha, *et al.* (2002) investigated occupational stress as a function of gender role identity and job type in a sample of general physicians (N=100). The findings revealed that there is significant main effects of job type and gender role identity. Job type by gender role identity interaction effects were also significant. These independent variables influenced singly as well as jointly the way doctors feel, behave, interpret, and cope with stress.

The workplace has been identified as the primary stressor and the home in contrast viewed as a sanctuary, where one can recapitulates problems at work. There is an assumption that women's role as wife, mother and homemaker are somewhat natural and are free from undue stress. However the necessity of carrying out multiple roles to meet their own needs and those of others is likely to increase stress, which influences their health. A study conducted by Osmany and Khan (2003) among 30 married and 30 unmarried working-women employed in different schools and offices of Delhi. Findings revealed that unmarried working women reported high stress at work place due to group political pressure and for married women, it was due to poor peer relations, group differences were not significant on other dimensions (Osmany and Khan, 2003).

Kim *et al.* (2005) tried to identify the relationship of work stress and family stress to the health of women employed in industrial sector in Korea. They found that, there was a significant positive relationship between social support and perceived health status (PHS), but significant negative relationships were found between PHS and work stress as well as family stress. And the study concluded that, both work stress and family stress should be considered together when addressing the health of working women in the industrial sector in Korea.

### **Hostility**

Hostility is a psychological contributor to negative health outcomes. Williams and Colleagues found that persons high in cynical hostility as measured by the Cook-Medley Ho scale were at increased risk of death due to all causes. In the light of studies by Suarez and Everson, one may speculate that hostile persons perceive many social situations in a negative light, produce feelings of hostility, and develop exaggerated physiological responses. Such situational appraisals and their accompanying responses may be at the elevated death rates seen in highly hostile persons (cited in Lovallo, 1997).

Suarez and Williams (1989) has shown that persons high in cynical hostility are producing larger blood pressure responses to a task performed. In a study of Everson *et al.* (1995) found that high hostile men reported feeling more global activation and a greater sense of distress than low-hostile men (cited in Lovallo, 1997).

Manufacturing strategy represents the way a firm plans to deploy its manufacturing resources and to use its manufacturing capability to achieve its goals. Recent research by Gyamph (2003) has pointed that, the important role of the workplace environment and strategy choices by the organizations. And

it also found that an emerging economy concerns about the competitive hostility is the factor with the strongest influence on performance.

Ambulatory heart rate and blood pressure would be higher for individuals high but not low in hostility when they experienced negative affect for social stress and that this interaction would be stronger for Indians compared with other Singapore ethnic groups (Enkelmann, *et al.*, 2005) Individuals high in hostility showed higher systolic blood pressure when reporting negative affect where as this was not true for those low in hostility. Also a three-way interaction between ethnicity, hostility and social stress between Singapore ethnic groups, indicated that hostility and social stress interacted in their effects on DBP for Indian participants but not for Chinese or Malaya. Again three way interaction between ethnicity, hostility and negative affect for heart rate in which heart rate increased with increasing levels of negative affect for Chinese high hostility and Malyas low in hostility.

Study by Sandhya Rao, *et al.* (2004) used data from the national drug abuse treatment outcome studies (DATOS) to investigate the association that pre-treatment, depression and hostility have with drug use and criminal behaviour at 1 year and 5 year follow-up in patients with and without additional treatment involvement in the year prior to each follow-up. Multiple regression analysis revealed that greater depression predicted less drug use in the year preceding each follow up, whereas greater hostility predicted increased drug use and more arrests at each follow-up. Furthermore, these predictive relationship appeared only among individuals not involved in additional treatment. And finally he study concluded that depression and hostility showed opposite associations with outcomes, underscoring the need to assess these psychological conditions seperately and tailor treatment plans appropriately.

Virtanew, *et al* (2005) used two studies to examine whether mental health and hostility predicted temporary employment. Study involved a Cohort of 970 Finnish hospital employees (102 men, 868 women) who had temporary job contracts at baseline. After adjustment for demographics, organizational tenure and part-time work status, doctor diagnosed psychiatric disorder predicted continuing in temporary employment instead of receiving a permanent job by the end of the 2 year follow-up. A higher level of hostility was also associated with temporary employment, but only among employees in low socio-economic positions. In study 2, anxiety and aggressive behaviour were measured in a Cohort of 226 Finnish School Children (116 boys, 110 girls) at 8 years of age. Anxiety in childhood predicted temporary employment at age 42. Aggressive behaviour in childhood was related to ongoing temporary employment status in adulthood among individuals in low socio-economic positions. Our findings suggest that selection by individual characteristics operates between the temporary and permanent workforces. Mental health problems, a part of which are already seen in childhood, seem to restrict individuals' possibilities to gain secure labour market positions. Hostility and aggressiveness seem to be related to labour market prospects only among individuals in low socio-economic positions.

Inspired by affective events theory Timothy *et al.* (2006) examined the nature of work, work attitudes and workplace deviance. Sixty four employees completed daily surveys over 3 weeks, reporting their mood, job satisfaction, perceived interpersonal treatment and deviance. Supervisors and significant others also evaluated employees workplace deviance and trait hostility respectively. Over half of the total variance in workplace deviance was within individual and this intra individual variance was predicted by momentary hostility, interpersonal justice, and job satisfaction. Moreover trait hostility moderated the interpersonal justice - state hostility relation such

that perceived injustice was more strongly related to state hostility for individuals high in trait hostility.

Julkunen and Ahlstroma (2006) investigated the relationship of hostility and anger expression to sense of coherence (SOC) and their role as predictors of health related quality of life. It is concluded that the role of hostility as a risk factor of mental health and physical well-being and should be considered for further studies.

### **Personality and hostility**

Hostility of type A's may provoke more arguments and conflicts with others. Subjects high in hostility, reported more hassles, more negative life events, more marital conflicts and more work related stress than subjects who were lower in hostility (Smith *et al.*, 1988).

According to the personality, Friedman and Rosenman (1993) divided people into two basic types. Type A and B - who exhibited different characteristics. The type A personality include strong competitive orientations, impatience, time urgency, anger and hostility. In contrast type B personality is marked by relatively relaxed patient, easy going, amicable behaviour.

In the Whitehall studies, Type A behaviour was found to be more frequent in higher occupational groups, whilst hostility and cardiovascular risk are more prominent in lower grades (Marmot *et al.*, 1991).

It is easy to interpret evidence for the role of psychological factors such as hostility in ill-health as favouring interventions at the individual level. Hostility is more common in lower social classes (Reberts, *et al.*, 2001).

The fact that hostility itself is a broad concept should also not be overlooked - possessing as it does connotations of anger, aggression and a

chronic negative outlook. Aspects which may encompass behaviours, feelings and cognitions and which may require additional coping resources to deal with (Roberts, *et al.*, 2001).

Elovainio *et al.* (2003) examined whether hostility and neuroticism moderated the effect of organizational justice perceptions on short-term sickness absence among 506 male and 3570 female hospital employees. Hierarchical moderated Poisson regression models suggest that low procedural justice perceptions related to increased sickness absence more in hostile men than in other male employees. Low relational justice perceptions were a greater risk for sickness absence for male employees with higher neuroticism than for their colleagues with lower neuroticism.

Type A subjects are characterized by dysfunctional cognitions related to themes of competitiveness, achievements and hostility. Faunce, *et al.* (2004) investigated attentional biases for words relevant to the content of these dysfunctional schemata in Type A individuals. After completing the MMPI-2 Type A scale, subjects completed two alternative versions of a visual probe detection task which contained achievement, failure, and anger/hostility/aggression related words. Prior to testing at time 1, subjects were told that the purpose of the procedure was to collect normative data only. Prior to testing at time 2, subjects were told that performance on the test was known to be closely related to IQ and that they could compare their performance with that of other subjects following completion of the task. Type A subjects directed attention towards anger/hostility/ aggressions words under low performance motivation conditions but away from such words under high performance motivation conditions.

The presence of personality traits of aggression and hostility, in generally healthy human subjects, has been shown to be associated with elevations of C-reactive protein (pCRP), which has also been shown to be

associated with an increased risk of cardiac disease. In this pilot study by Coccaro (2005) concluded that, the association of elevations in pCRP level in medically healthy personality disordered subjects with higher scores of trait aggression and hostility suggests the presence of chronic inflammation in highly aggressive/hostile personality disordered subjects.

### **Hostility and Stress**

Difference in physiological reactivity and recovery to stress among low and high hostile men were assessed by Rhodes *et al.* (2002). 25 low and 25 high hostile: undergraduates were identified and to ensure homogeneity, all subjects were right handed and had a general right homibody preference. Increased physiological arousal between pre and post stress measurements was used as an indicator of reactivity. Subsequent decreases in physiological arousal were used as recover measures. Given the current models of negative emotion and hostility, it was expected that high-hostiles, relative to low hostiles, would evidence increased physiological arousal and decreased recovery to stress, Interestingly, high-hostiles experienced significantly greater reactivity to stress in heart.

Significant age-adjusted trends for declining well-being with occupational position have also been reported for social functioning, satisfaction with life, positive affect, hostility, job satisfaction and various forms of social support (Marmot, *et al.*, 1991).

The purpose of the study was to compare the stress-response-dampening (SRD) effect of alcohol in hostile and non-hostile men based on a combined score of four subscales of the Cook-Medley Hostility scale. Subjects were 72 male social drinkers. Results demonstrated that hostile men evinced lower heart rate and systolic blood pressure (SBP) reactivity to the stressor when given alcohol, compared with intoxicated non-hostile subjects,

and lower reactivity relative to all other groups, with the exceptions of SBP in the non-hostile controls. These results show for speculation that hostile men may be more likely than controls to experience possible SRD effects of alcohol and thus, perhaps, be predisposed to increased alcohol consumption when under stress (Zuchner, *et al.*, 1995).

### **Hostility and Depression**

According Heller (1993), the increased levels of depression and anxiety seen in the high-hostile group should serve to negate one another. Heller proposes a relative increase in right frontal activation with both anxiety and depression. However, the posterior systems that she proposes for the regulations of autonomic arousal are diametrically opposite for these two effective states. Cerebral patterns for depression should include a relative rights frontel increase in activation, coupled with decreased activation of the right parieto temporal areas.

Hostility and autonomic arousal appear to be mediated by the right hemisphere. Therefore, exposure of high-hostile individuals to a cold presser stressor would be expected to result in increased physiological reactivity. Physiological arousal is produced in high hostile individuals which means that high negative emotional states have been induced High hostiles are having higher depression scores than the low hostiles. (Demarce and Harrison, 1997 and Demarce, Harrison and Rhodes, 2000).

Sixty five women (aged 32-54 years) were assessed at two months before to eight months after total abdominal hysterectomy on four separate occasions. High dysphoric and low dysphoric women were compared with regard to hysterectomy outcomes. Married nulliparae suffered from enhanced depression in post-surgery. Pre surgery anxiety, back pain and lack of dyspareunia contributed to post-surgery anxiety. Pre surgery anxiety was

related to life crises. Pre and post surgery hostility occurred in conjunction with poor sexual gratification. Post hysterectomy health improved but quality of sexual relationship was impaired. Partner support and knowledge counteracted hysterectomy aftermath. Post hysterectomy symptoms constituted a continuum to pre-surgery signs of depression, anxiety and hostility (Ewalds-Kvist et al, 2005).

The 14 years longitudinal study (Heponiemia, *et al*, 2006). Independent association between perceived social support and the 5-year progression of depressive tendencies while taking into account the potential effects of childhood/adolescent anger and later hostility. The results showed that higher levels of perceived social support were associated with the decrease of depressive tendencies prospectively and after 5 years. This association persisted after adjusting for childhood/adolescent anger and later hostility. In addition, hostility was strongly related to the 5-year increase of depressive tendencies and higher levels of depressive tendencies. Social support may therefore be a long-term protective factor from depression irrespective of personality characteristics, such as hostility and anger.

Low and stocker (2005) were examined relationship between parents depressed mood, marital conflict, parent-child hostility and children's adjustment in a sample of 136 ten-year olds and their parents. Results showed that both mother's and father's depressed mood and marital hostility were linked to parent child hostility, which in turn were linked to children's internalising problems. Father's depressed mood was linked to children's internalising problems indirectly through father-child hostility. Father's depressed mood was directly linked to children's externalising problems and indirectly linked through father-child hostility. For mothers, marital hostility was directly linked to children's externalising problems, and marital hostility

in father's was indirectly linked to children's externalising problems through father-child hostility.

Weiss *et al* (2005) examined the association between hostility, level of depressive symptoms, and smoking in a sample of 1699 ethnically diverse students in California. Self-reports were collected twice from each student, at the beginning up the 6<sup>th</sup> and 7<sup>th</sup> grade years. Among 6<sup>th</sup> graders who had not smoked, depressive symptoms and hostility were associated with smoking initiations by the 7<sup>th</sup> grade. Among those students who had already tried smoking, increase in depressive symptoms and hostility were associated with more frequent smoking. The association between hostility and smoking was stronger for students reporting higher levels of depressive symptoms.

In a study of Benazzi and Akiskal (2005) consecutive 348 bipolar-II (BP-II) and 254 unipolar (UP) major depression disorder (MDD) outpatients were interviewed with the structured clinical Interview for DSM-IV, the Hypomania interview Guide, and the family history screen. Borderline personality, a confounding variable, rare in the FB setting, was excluded. Irritability was defined according to DSM-IV-TR, which includes various features of hostility and anger. Depressive mixed state (DMX) was defined as a major depressive episode (MDE) plus three or more concurrent intra depressive hypomania symptoms, whether it occurred in BP-II or MDD. The analysis show that irritable-hostile depression is distinct from agitated depression. Whether arising from a BP-II or MDD baseline, irritable-hostile depression emerges as a valid entity with strong links to external bipolar validations, such as bipolar family history. Irritable hostile phenomenology in depression appears to be strong clinical marker for a DMX.

The objective of the survey was to compare depressive symptoms in depression with and without a concomitant organic disease. No significant difference was found between the two groups in terms of anxiety or cognitive

symptoms, fatigue or feelings of disability. The results do not indicate any symptom that is specific to a combination of depression and somatic diseases. Guilt and hostility showed a lower level in depression associated with a concomitant somatic disease than in isolated depressions. (Guelfi, *et al*, 2004).

Suarez, *et al* (2004) investigated the relation of hostility and severity of depressive symptoms, separately and jointly, to the capacity of blood monocytes to secrete an array of cytokines when stimulated by bacterial lipopolysaccharide (LPS). Subjects were 44 healthy, non smoking, premenopausal women (aged 23-49 years) not currently taking oral contraceptives. In the analysis, higher hostility scores were associated with greater LPS-stimulated expression of interleukin (IL-1 $\alpha$ ) and IL-1 $\beta$ . Higher depression scores were associated with greater expression of TNF- $\alpha$  (tumor necrosis factor). Thus, in healthy women, these psychological risk factors, alone and in combination, induce a pro inflammatory phenotype in circulating monocytes characterized, by the up-regulation of pro inflammatory cytokines, supporting the hypothesis that inflammations may be a key pathway whereby hostility and depressive symptoms contribute to atherosclerosis and subsequent coronary heart disease (CHD).

Dracup, *et al* (2003) studied patients with heart failure (HF) to determine if perceived control reduces emotional distress (ie anxiety, depression and hostility) in chronic, debilitating cardiac illness and whether the demographic, clinical and psychologic characteristics of patients with high and low perceived control differed. Psychological assessment of 222 patients with heart failure found that patients with high-perceived control had significantly greater 6- minute walk distances and less emotional distress- patients with low perceived control had high emotional distress that is high level of anxiety depression and hostility.

Borgherine, *et al* (2002) assessed social adjustment in 145 depressed in patients using the self-reporting social adjustment scale to evaluate the contribution of demographic and clinical variables and examine social functioning at different levels of depression. The results indicate that the presence of psychopathology in association with interpersonal sensitivity, hostility and perceived social support aspects – and not the severity of current depressive symptoms – were the most important factors effecting social adjustment. Social disturbances are more pronounced in severe depressives who experience difficulties in all areas by contrast, patients with low depression symptom levels do not appear to be maladjusted, by comparison with a unity sample.

Sandhya, *et al* (2004) studied the data from the national Drug Abuse Treatment Outcome Studies (DATOS) to investigate the association that pre-treatment depression and hostility have with drug use and criminal behavior at the year and 6-year follow-up in patients with and without additional treatment involvement in the year prior to each follow-up. The total sample includes 727 patients at one-year follow-up and 432 patients at five-year follow-up. Multiple logistic regression analysis revealed that greater depression predicted less drug use in the year preceding each follow-up, where as greater hostility predicted increased drug use and more arrests at each follow-up.

Bag, *et al* (2005) aimed to evaluate anxiety, depression, hostility and psychological symptoms in patients with migraine and tension – type headache (TTH) and to compare the result with healthy controls. Seventy-five subjects with migraine and 55 subjects with TTH and a control group including 73 healthy subjects were studied. Compared with healthy controls, the patients with headache had significantly higher scores on measures of

anxiety, depression and hostility and lower scores on psychological symptoms.

Hatch, *et al* (1991) administered a battery of standardized psychomotor tests to a group of 47 episodic tension type headache sufferers and 47 headache-free controls. Compared to controls, headache subjects showered higher levels of anxiety, depression and anger/hostility. The groups did not differ significantly on a measure of anger expressed toward persons or objects, but headache subjects showed significantly greater levels of suppressed anger (hostility). The results provide productions and interrelationships among anxiety, depression and anger/hostility for developing psychosomatic illnesses.

Miller, *et al* (2003) explored the independent and interactive relationships between cynical hostility, depressive symptoms, and the expression of inflammatory Risk Makers for coronary heart disease. They found that depression was directly related to inflammatory makers, but hostility was not. A significant interaction between hostility and depression emerged

Brummett, *et al* (2000) examined the relations of hostility with self ratings of depressive symptoms in 898 spouse pairs. Self ratings of hostility were initially examined as predictors of depression. The interaction of self into spouse hostility were investigated on three components of hostility (cynicism, aggressive responding, and hostile effect). Self ratings of hostile affect were positively related to depressive symptoms for both men and women. Self ratings of cynicism were also significantly related to depression, but only for men. All these components of spouse's hostility were positively related to one's own symptoms of depression for women.

Heponiemi, *et al* (2005) examined the moderating effect of employee hostility on the association of unit level resident characteristics (depression and behavioural problems) to individual-level employee's resident-related stress and psychological well being during one year follow-up study among 501 employees in elderly care. Result showed that employee hostility was associated with decreased psychological well being. Hostile employees reported increased resident-related stress irrespective of the population of depressed residents in the unit. Instead, non hostile employees were sensitive to the depression in the unit. They reported low levels of stress when depression level in the unit were low and increased stress when depression levels were high.

The fourteen year longitudinal study by Heponiemi, *et al* (2006) examined the independent association between perceived social support and the five year progression of depressive tendencies while taking into account the potential effects of childhood/adolescent anger and later hostility. There results showed that higher levels of perceived social support were associated with the decrease of depressive tendencies after 5 years and lower levels of depressive tendencies prospectively and after 5 years. In addition, hostility was strongly related to the 5 year increase of depressive tendencies and higher levels of depressive tendencies. Social support may therefore be a long term protective factor from depression. Irrespective of personality characteristics, such as hostility and anger.

Anger is a common and potentially, destructive emotion that has considerable social and public health importance. The occurrence of anger, irritability and hostility in depression have been known for many years, but the prevalence, significance for treatment and prognosis and the mechanisms involved remain poorly understood. More recently, anger attacks have been proposed as specific form of anger in depression. They are characterized by a

rapid onset of intense anger and a crescendo of autonomic arousal occurring in response to trivial provocations. Though the presence or absence of hostility, anger and aggression in depression has been a matter of controversy, anger attacks have been found to occur more often in depressed patients in comparison to healthy controls. Some studies have reported that depressed patients with anger attacks differ from those without such attacks in terms of clinical profile, comorbid personality disorders and certain biological variables, serotonergic dysfunction may characterize this distinct subtype of depression – depression with anger attacks. (Paincely, *et al* 2005).

Psychological stress is accompanied by negative emotions and associated behaviours including depression, hostility, anger and aggression. (Lovallo, 1997). Depression and hostility were significantly related to a variety of negative health outcomes in an extensive reanalysis of data from a large number of studies (Booth-Kewely and Friedman, 1987).

Weiss's work on behavioural depression and uncontrollable aversion stress favours the view that the locus ceruleus is the critical site of altered central nervous system function, other work suggests that social stress can alter the serotonergic system associated with the brainstem raphe nuclei. Drugs that alter serotonin levels in the brain affect mood and behaviour, including feelings of depression and hostility, anger and aggression (Lovallo, 1997).

## **Depression**

Women's greater risk of depression is one of the most consistent findings in psychiatric epidemiology. However, the explanation for this difference remains contested. Here possible explanations were tested using a sample of couples where, because they had experienced a life event that was severe for both members, both the woman and man were at risk of depression.

There was no evidence to suggest that the higher range of depression among women in this sample was the result of a measurement artefact. In addition, men were not more likely to develop alternative, externalising disorders to depression. If anything, women were more likely to experience and express anger about the life event. Consistent with an explanation based on gender differences in roles, women were only at greater risk of depression following an event involving children, housing and reproduction, and then only when there were clear gender differences in associated roles. Such a specific difference cannot be explained easily as a result of biological differences, particularly as among women rates of depression did not vary by parity. In conclusion it seems likely that women's greater risk of depression is a consequence of gender differences in roles, which lead to differences in the experience of life events (James, *et al* 1998).

Besser and Priel (2003) investigated the effects of self criticism, dependency, and attachment variables in depression among couples. They utilized a multi source design that involved self reports of personality and depression. This approach enabled them to explore the patterns of relations between self reported and the spouse's report of the partner's view of self criticism dependency and attachment dimensions, as well as the contribution of the latter to the moderation of distress. Participants were 120 couples in their first marriages. It was found that (1) self –and spouses' reported self criticism are both associated with depression; (2) negative assessment of personality factors and attachment models by the self and spouse contribute uniquely in predicting depressive symptomatology; and (3) beyond the co variation between targets depression and marital maladjustment, attachment models of self and of other as reported by both the self and spouse moderate the effects of self reported personality vulnerability on depressive symptomatology. Our results indicate that self-ratings and ratings by others

must both be considered in the context of depression in close interpersonal relationships.

Eystein (2003) has conducted a cross-sectional study with survey methods and clinical examination, to examine the relationship between anxiety disorders and depression and various health problems in the general population. The sample size was 60869 – individuals aged 20-89 years. Multivariate nominal logistic regression analysis was used to investigate the relationship between somatic variables and the anxiety/depression categories. And the study concluded that, somatic health problems carry a high risk of both anxiety disorder and depression. Active identification and treatment of these co-occurring mental disorders are of practical importance. There is a high occurrence of depressive symptoms in patients with somatic health problems. About one-third of individuals with somatic health problems have anxiety disorders and/or depression. Co-morbid anxiety disorder and depression are found to be more strongly associated with somatic health problems than pure anxiety disorder and pure depression.

The coping strategies and coping resources are found to be associated with depression and play a mediating role in determining the development of depression. Kikhavani and Kumar (2005) investigated the life events and coping resources in predicting the onset of depression. And it is concluded that, significant difference between depressed and healthy group with regard to the stress experienced due to different life events was noted.

Study by Bazargan (2005) applied the behavioural model for vulnerable populations framework to examine the correlates of depression and the receipt of medical treatment among low-income Hispanics and African Americans residing in public housing. The study compared three groups: those who reported (1) self-diagnosed but without physician-diagnosed depression, (2) depression diagnosed by a physician but who did not receive

pharmaceutical treatment, and (3) depression diagnosed by a physician and antidepressant pharmacotherapy consumed by patient. Random samples of 287 adults from three public housing communities were surveyed. Over 48% of this sample reported being depressed also said that a physician had never diagnosed depression also reported taking anti depressant medication. Untreated depression among underserved racial and ethnic minorities is alarming and points to an urgent need for intervention.

### **Stress and Depression**

Development of depression due to central nervous system alterations associated with uncontrollable stress. Exposure to uncontrollable shock (stress) and chemical manipulation of Norepinephrine (NE) in the locus ceruleus lead to behavioural changes corresponding to six of the eight clinical signs of human depression. These are:

- (1) Poor appetite and weight loss.
- (2) Poor performance on tasks requiring psycho-motor performance.
- (3) Loss of energy and apparent fatigue.
- (4) Loss of interest in usual activities
- (5) Sleep changes, including less sleep time and more fragmented sleep.
- (6) Increased distractibility and indecision. (Weiss, 1980).

Evidence from recent research (Kessler, 1997) on the relationship between stressful life experiences and depression, suggests that acute stressful life events can lead to the recurrence of episodes of major depression. Early research in life stress and depression was almost exclusively concerned with life events. Chronic role related stresses are significantly associated with chronically depressed mood (Mirowsky and Ross, 1989, Pearlin, 1989).

Jacob (2003) explored etiological factors of depression in the social context. And it suggests that stress can be a predisposing, precipitating, or

perpetuating cause or even the consequence of depression. Depression in people with good coping abilities is usually of short duration (less than 3-6 months) compared to people with dysfunctional coping patterns who present with long histories.

With the ever-increasing styles of stressful life events, the incidence of mental illness has increased. The most common and widespread illness, which seems to exist everywhere, is depression. According to World Health Organization (WHO, 1982), there is five percent of the world population suffering from depression (Bano *et al* 2003), Weissman and associates (1978) estimated that over a life time 25 percent of the general population experienced at least one clinically significant episode of depression. WHO has predicted that by 2020, the world would be more mad and sad.

The cognitive behavioural theory on the other hand, emphasized the role of intra psychic factors in the etiology of depression. According to this approach, individuals develop depression symptoms because they had negative schema, which Beck (1967) had called 'Cognitive Triad' once activated preserves itself through a cyclical process. This dysfunctional attitude causes them to become depressed.

### **Depression and Personality**

Smith, McGurie and Fox (1971) studied 50 consecutive patients with primary depressive illness using personality inventory scales failed to reveal any significant differences between the personality substructures of those with early and late onsets (cited in Friedman *et al.*, 1974).

Henry, *et al.* (2003) found evidence of a mental suppression effect between anxiety and depression on an individual's level of commitment within escalation dilemmas. On the one hand, our results demonstrate a positive relationship between anxiety and level of commitment; on the other,

our results demonstrate a negative relationship between depression and level of commitment. Based on the opposing relationships between anxiety, depression and commitment, the broad factor of neuroticism does not demonstrate any relationship with level of commitment, and the significant effects of anxiety and depression on commitment is contingent upon partialling the effect of the other facet of neuroticism. Thus, we content that applied psychologists, who have focussed on neuroticism as a broad construct, should consider the large body of work among clinical psychologists, who argue that anxiety and depression have unique variance associated with them.

Coping strategies, such as working harder and negotiation, may have an effect on depression for employed Korean immigrant wives. Additionally, income and education have been associated with depression in previous research. A cross-sectional survey design research was used to explore which coping strategies and demographic variables were significantly related to depression for employed Korean immigrant wives Chung, *et al.* (1999) aimed that the results of multiple regression analysis revealed that coping strategies and demographic variables accounted for 24% of the variance in depression. Specially, as wives worked harder cleaning the house, their depression increased, whereas when they negotiated with their husbands, they were less likely to be depressed. To enhance negotiation among Korean wives, mental health nurses need to work within the community to foster the development of cultural and traditional norms that sanction negotiation between husbands and wives.

Education and income have been associated with depression. Shew (1992) found that Korean women with higher education levels reported significantly less depression than their counterparts. For Korean immigrant women, education was related to satisfaction with life, and satisfaction with

life had a strong negative relationship with depression (S. Kim, 1993). Likewise, for Korean immigrants a significant negative relationship has been found between depression and income (Hurb and Kim, 1988; Noh and Avison, 1992). Last, children have been associated with depression for working mothers who assume full responsibility for childcare (K.C. Kim and Hurb, 1988; Kopp, 1992; Rhee, 1998; Spurlock, 1995) (cited in Chung, *et al.*, 1999).

The purpose of this study was to determine which coping strategies (working harder, negotiation, or both) and demographic variables (employment, number of children, education, personal income, and family income) were related to depression for employed Korean immigrant wives. *Negotiation* was defined as discussion with the husband about his sharing the household responsibilities (Chung *et al.*, 1999).

The past decade has given rise to an increasing interest in relationships between goal setting and depression. Significant relationships have been identified between goal type, goal framing, goal difficulty and goal organisation and depressive experiences. The present paper explores individual's motivations controlling goal setting and their relationship to rumination and depression. Findings indicate that whilst some individuals make their personal well-being conditional upon general life achievements, others make the achievement of only one or two specific goals a prerequisite for personal happiness. This specific process has been named conditional goal setting (CGS). Findings suggest that CGS is significantly related to depression. This relationship appears to be mediated by rumination with CGS of achievement goals but not CGS of relationship goals. (Helen, 2001).

Previous studies have shown the medical community to exhibit a relatively high level of certain mental health problems, particularly depression, which may lead to drug abuse and suicide. (Reidar and Per, 2002) reviewed prospective studies published over the past 20 years to investigate the prevalence and predictors of mental health problems in doctors during their first post-graduate years. They selected clinically relevant mental health problems as the outcome measure. They found nine cohort studies that met our selection criteria. Each of them had limitations, notably low response rate at follows-up, small size, and for short observation period. Most studies showed that symptoms of mental health problems, particularly of depression, were highest during the first postgraduate year. They found that individual factors, such as family background, personality traits (neuroticism and self criticism) and coping by wishful thinking, as well as contextual factors including perceived medical school stress, perceived overwork, emotional pressure, working in an intensive care setting, and stress outside of work, were often predictive of mental health problems. The studies revealed somewhat discrepant findings with respect to gender.

Helen (2002) offers a new theory of conditional goal setting within a comprehensive overview of the literature on goals and depression. The past decade has seen a growing interest in the relationships between goals and depression. Several researchers have suggested that the content and framing of important goals are indicative of vulnerability to depression. To example, individuals valuing relationship goals above achievement oriented goals have been found to have a greater sense of well being than individuals placing achievement goals above relationship goals. Other researchers have focused on the processes of goal pursuit. They have identified relationships between actual/ideal discrepancies, perceived progress to goal achievement and levels

of depression. Reactions to goal loss and goal failure have also been an important topic of goals and depression research with a focus on the vulnerable individuals inability disengage from important failed goals. Although many of the goal theories examine what goals depressed individuals have set and how they are pursued, little research has examined why certain goals are made important. Conditional goal setting offers an explanation for the motivations controlling the setting of important goals in the individuals vulnerable to depression. It is significant in that it describes a relationship between goal setting and depression that exists irrespective of goal success or failure.

Christiano (2003) evaluated the Friedman-Schwartz hypothesis that a more accommodative monetary policy could have greatly reduced the severity of the Great Depression. To do this, they first estimate a dynamic, general equilibrium model using data from the 1920s and 1930s. Although the model includes eight shocks, the story it tells about the great Depression turns out to be a simple and familiar one. The contraction phase was primarily a consequence of a shock that induced a shift away from privately intermediated liabilities, such as demand deposits and liabilities that resemble equity, and towards currency. The slowness of the recovery from the Depression was due to a shock that increased the market power of workers. We identify a monetary based rule, which responds only to the money demand shock in the model. They solve the model with this model to all the estimated shocks. Based on the model analysis, it is conclude that if the counterfactual policy rule had been in place in the 1930s, the Great Depression would have been milder.

Major depression in a multifactorial disorder. Previous studies have mainly evaluated work stress to determine the risk factors for depression among workers. The present study by Tokuyama, *et al* (2003) were aimed to determine factors predictive of the first depressive episode one year later among white collar workers, and to examine whether work stress is associated with an elevated risk of depressions. A five year open-cohort study was carried out in a Japanese company. Ninety-eight first onset cases were compared with 1267 never ill cases. Forward stepwise multiple logistic regression indicated that the first onset of depression was associated with a past history of panic attack, neuroticism, perceived over protection, poor support and low care. First onset cases were more likely to have had objective work events but they did not differ from never ill cases in subjective job stress. The development of major depression in white collar workers is associated with multiple factors, as in depression in the community.

### **Depression in the workplace**

With the sustained economic recession, suicide has been increasing in Japan (more than 3000000 victims annually since 1998). Particularly among middle-aged employees. Development of preventive measures is needed, however, employees have limited knowledge of the basic information about suicide and depression. One office in Sitama prefecture, Japan, has been provided with a mental health support programme. An initial questionnaire survey was conducted in December, 1999. It contained demographic data and information about working styles and daily habits, including alcohol and tobacco use, quality of sleep, social support, the general well-being schedule, and knowledge/attitude toward depression and suicide. Of 225 eligible people, 216 men and women participated. Most of them had stressful

schedules and demanding jobs. Their subjective well-being was generally poorer relative to the reference. The mean score of the knowledge was 10.5. (S.D = 2.02) for 14 items. the accuracy rates ranged from 97.6% incorrect (false) for such items as Most suicide victims consult psychiatrists before their deaths to 42.1% correct (true) for A succeeded individual tends to be accident prove for traffic accidents and injuries. 'One-fourth of them had unfavourable attitudes toward depressive colleagues. Neither age nor gender was related to knowledge level and attitude. Variations were observed in the knowledge that employees had toward depression and suicide. A program that provides employees with appropriate information related to mental health is needed. (Nakayama and Amagasan, 2004).

Coping styles influence levels of stress. The study by Baugher (2004) examines low workers cope with regards at work and whether unions help workers cope more effectively with those hazards. Problem focused strategies to cope with those potential risks reduced anxiety and depression. Aside from supervisory or managerial authority, which is not available to most workers, he found that only one factor effectively moves workers who are in subordinate positions to actively cope with hazards membership in an independent labour union. These findings also suggest that union growth could indirectly reduce job stress by giving workers of the voice to cope effectively with job hazards.

Takeaki, *et al* (2006) conducted a screening for major depression in the workplace by using mandatory testing diagnostic accuracy of a two item questionnaire. They studied 1621 workers, completed both the POMS Questionnaire (profile of Mood states) and DSH-IV interview for MD (Major depression) at an institute in Tokyo-Japan. The prevalence of MD was 3.5%

in total. The item feeling blue had the lightest area under the receiver operator characteristic curve (AUC) in both women and men. And it is concluded that simply ascertaining a mood of "feeling blue" may be a convenient and time-efficient strategy to screen for MD in both female and male workers.

Ghufran (2006) designed to study the effects of women empowerment and self-esteem on depression in housewives and working class women in relation to their age. Sample of 120 women was selected in such a manner that half of the women were young (age ranging from 25 to 40 years) and remaining half were old (age ranging from 60 to 75 years). The results of the study revealed self-esteem to be a moderating factor of depression in women. The higher mean depression score of women who were not empowered by their family members were more prone to depression. The difference between the mean depression scores of young house wives and the mean depression score of workingwomen of the same age was statistically not significant at .05 level of confidence. The result suggest that the women who were working in government and semi government establishment were experiencing as much depression as those women who were not in job.

Noda, *et al* (2006) report a case in which they found that the conventional Japanese business model did not make occupational stress problem in the sense of vitality of company's employee from the view point of healthy company" and "health people". They also suggest that positive workplace atmosphere had influenced in preventing mental health problems. The "unhealthy company" was reproduced to "healthy company" by "healthy people".

Muntanera, *et al* (2006) identified low wage workers represent an ever-increasing proportion of the US workforce. A wide spectrum of firms demand low-wage workers, yet just 10 industries account for 70% of all low-paying jobs. The bulk of these jobs are in the services and retail sales industries. In health services 50% of all workers are low-paid, with nursing aids, orderlies, personal attendants, and home care aides earning an average hourly wage - a wage that keeps many of these workers hovering near or below the poverty line. Nursing assistants also tend to work in hazardous and grading conditions. In empirical studies of low-wage workers, county level variables are of theoretical significance. Multi level studies have recently provided evidence of a link between county-level variables and poor mental health among low wage workers. Emotional strain have a statistically significant association with depression symptoms in this populations. Yet when controlling for county-level variables of poverty, the organizational-level variables used were no longer statistically significant predictors of depression symptoms.

# METHODOLOGY

Biji Mathew “Workplace depression: An analytical study” Thesis. Department of Psychology , University of Calicut, 2007

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## *Chapter III*

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# *Method*

- ❖ *Participants*
- ❖ *Measures*
- ❖ *Procedure and administration*
- ❖ *Scoring*
- ❖ *Research design*
- ❖ *Statistical analysis*

This chapter focuses on the details of methodology used for this investigation. The definition and need for methodology are explained by many researchers. Kothari (1993) wrote, "Research Methodology in a way to systematically solve the research problem. It may be understood as a science of studying how research is done systematically". It is not only talks about the research methods but also consider the logic behind the methods used by the investigator in the context of the research study and explain why here a particular method or technique is used and why not other methods, so that research results are capable of being evaluated either by researcher himself or by others.

The method consists mainly of the following six sections.

- 3.1 Participants
- 3.2 Measures
- 3.3 Procedure and Administration
- 3.4 Scoring
- 3.5 Research Design
- 3.6 Statistical Analysis

### **3.1. Participants**

The population for the present investigation is defined as nurses who are working in either government or private hospitals in Kerala. Purposive sampling technique was employed for selecting hospitals. Purposive sampling is characterized by the use of judgment and a deliberate effort to obtain

representative samples by including presumably typical areas or groups in the sample (Kerlinger, 1998). And simple random sampling method was used for selecting the nurses from those institutions. It is the method of drawing a portion or sample of population or universe, so that all possible samples of fixed size in have the same probability of being selected (Kothari, 1999).

The total final sample includes 338 female nurses who are working on full-time basis either in both government or in private hospitals of four different districts of Kerala state namely Calicut, Ernakulam Kottayam and Alapetty. Their age ranges from 22 to 55 years and the mean age is 29.84.

#### **Inclusion criteria**

- (1) B.Sc. (N) G.N.M. (Diploma in general nursing and midwifery) passed female nurses are included.
- (2) Minimum 2 years of working experience and currently working on full-time basis.
- (3) Those who can read and write Malayalam and English

#### **Exclusion Criteria**

- (1) Other diploma and degree holders in the nursing field.
- (2) Male nurses
- (3) Nurses who are having below 2 years of experience
- (4) Part-time nurses
- (5) Those who are unable to read and write Malayalam and English.

The detailed sample break-up based on different criteria along with personality dimensions are given as follows. The investigator has used some criteria for grouping the years of service, age and hostility. Calculated median was treated as the cut off point. The scores up to the cut off point are categorized and formed the first group. The second group was based on the

scores lies between two cut off points which are calculated as by adding and subtracting the half of the standard deviation with median. And the third group was formed as with the scores of from and above of the third cut off point. But the variable occupational stress was grouped only in to two. Median was treated as the cut off point for dividing the low and high stress group. Again hostility was categorized in to two groups for testing the last hypothesis. Median was calculated for breaking the sample. The following sample break-up were based on personality dimensions of IAS. Participant's personality type is determined by the high score among the three dimensions.

Table 3.1.1

**Sample break-up on the basis of years of service and personality dimensions**

Personality Dimensions Years of service	Inertia	Activation	Stability	Total
1-5 years	130	43	23	196
6-10 years	33	11	7	51
11 – above	64	13	14	91
Total	227	67	44	338

Table 3.1.2

**Sample break-up on the basis of religion and personality dimensions**

Personality Dimensions Religion	Inertia	Activation	Stability	Total
Christian	116	22	21	159
Hindu	85	32	21	138
Muslim	26	13	2	41
Total	227	67	44	338

Table 3.1.3

**Sample break-up on the basis of qualification and personality dimensions**

Personality Dimensions Groups	Inertia	Activation	Stability	Total
	B.Sc (N)	132	30	15
G.N.M.	95	37	29	161
Total	227	67	44	338

Table 3.1.4

**Sample break-up on the basis of service sectors and personality dimensions**

Personality Dimensions Groups	Inertia	Activation	Stability	Total
	Government	104	22	24
Private	123	45	20	188
Total	227	67	44	338

Table 3.1.5

**Sample break-up on the basis of marital status and personality dimensions**

Personality Dimensions Groups	Inertia	Activation	Stability	Total
	Married	116	31	28
Unmarried	111	36	16	163
Total	227	67	44	338

Table 3.1.6

**Sample break-up on the basis of hostility and personality dimensions**

Personality Dimensions Groups	Inertia	Activation	Stability	Total
	0 – 95.73 (Low)	51	32	26
95.74 – 113.18 (Medium)	96	26	14	136
113.19 and above (High)	80	9	4	93
Total	227	67	44	338

Table 3.1.7

**Sample break-up on the basis of age and personality dimensions**

Personality Dimensions Groups	Inertia	Activation	Stability	Total
	22 – 25	81	33	15
26 – 34	95	23	19	137
35 – above	51	11	10	72
Total	227	67	44	338

Table 3.1.8

**Sample break-up of low and high groups of occupational stress and multiphasic hostility**

Groups	Occupational stress	Multiphasic hostility
Low	172	174
High	166	164
Total	338	338

### 3.2. Measures

The following tools were used for the present study

- a. IAS Rating scale (Mathew, 1995)
- b. Multiphasic Hostility Inventory (Jayan, Baby Shari and Biji 2005).
- c. Occupational Stress Inventory (revised) (Joseph, Jayan and Dharmangadan, 2004).
- d. Hamilton Depression Inventory (Hamilton, 1967)
- e. Personal Data Sheet
- f. Unstructured interview

A brief description of the tools used, including their psychometric properties are given below.

#### 3.2.1. IAS Rating Scale: (Mathew, 1995)

The scale is a revision of two personality inventories, the Mathew SRT inventory developed in 1972 and Mathew Temperament Scale developed in 1976. The IAS Rating Scale measures three broad behavioral tendencies (Personality components) namely Inertia, Activation and Stability.

Root fear (death or survival anxiety, existential insecurity) as *Inertia* level or type of personality is accompanied by defensive, nonawareness or inhibition. Inertia is introverted instability on proneness to develop introverted type of maladjustment under stress. Activation is characterized by restless over activity, uncontrolled energy, high drive and inability to remain alone or silent. Activation is extroverted inability or proneness to develop extroverted types of maladjustment under stress. Stability is characterized by high self awareness, sensibility and freedom from maladjustment tendencies.

The Mathew IAS Rating Scale can be used as an instrument for measuring personality as well as an aid in developing self-awareness for personality development and counseling.

Trait descriptions are given below:

1. **Inertia** can be described as: Lethargic, Lacks energy, Slow, Late Fear, Anxious, Timid, Not venturing, inhibited, Shy, Withdrawn. Weak-willed, suggestible, Submissive, Unable to assert, Refuse or argue, Inability to mix with strangers, Low Self-confidence, Blind conformity, No strong emotional ties, Masochistic, Intropunitive, External Locus control (believing in fate and luck), No strong moral control, no definite values, Collectivistic.

2. **Activation** can be described as: Overactive, Uncontrolled energy, Impatient, Hasty, Efficient planning practical things for the future, Analytical, Risk taking, Rash Adventurous, Go-getting, Acquisitive, Aggressive, Greedy, Competitive, Mania, Passionate, Ego-involved, Assertive, Dominant, Inability to be a follower, Thick-skinned, proud, Egoistic, Values power, rebelling, Extra punitive, Sadistic, Unable to remain alone or be silent, Internal Locus of control (believing in self-effort and freedom of will), Needing rigid external moral controls, Having conflicts, Individualistic.

3. **Stability** can be described as : Controlled, restful, detached action, Meta-motivation Sensitive, Can be fast or slow as the situation demands, Punctual, Philosophical, Wise (in addition to being, practically efficient). Self-actualizing, holistic, intuitive, taking calculated risks, balanced, mature, open, warm, even tempered, dispassionate, self-sufficient, self-accepting, relaxed, peaceful and democratic. Can make a show of anger when required, Fair, Tolerant, Loving, Unselfish, Altruistic, Enjoys aloneness or Company, Reforms groups, Moral sense based on Love, Broad minded, Transcending sex.

## **Types of Rating**

The instrument can be used to get self-rating or "Other" (non-self) ratings. Other rating include TGM (Typical Group Member) rating, Peer rating (rating of a rate of equal Status), "Superior" rating (rating made by a rater having a superior or supervisory status in relation to the rate), and "Subordinate" rating (the rater being subordinate to the ratee as when a student is evaluating a teacher). Another possible type of rating is 'Expert' rating (when a psychologist makes a rating after an interview or prolonged purposive observation of a ratee). No separate provision has been made in the answer sheet for such a rating, but the column for 'Superior rating can be used for this.

For the present study self rating was used.

## **Reliability and Validity**

Reliabilities are in general high, particularly for reasonable educated adult rates. Vinod Kumar (1995) reports split half reliability of 0.73, 0.89 and 0.86 for the scales, I, A and S respectively, in a sample of 43 adult raters for self rating.

The trait classification has a high degree of construct validity as they are based on a highly developed theory anchored on time-tested traditional concepts of personality. Meaningful mean group differences have been reported on the three scales on a variety of studies.

A copy of the scale and response sheet is appended (appendix I).

### **3.2.2. Multiphasic Hostility Inventory (Jayan, Baby Shari and Biji, 2005)**

The test was developed for the use of this present study. The whole procedure of test development, administration, scoring and its psychometric properties are given in the chapter IV.

A copy of the final version is attached in appendix II.

### **3.2.3. Occupational Stress Inventory (Joseph, Jayan and Dharmangadan, 2004)**

The occupational stress Inventory (OSI), revised and adapted edition was developed by Joseph, Jayan and Dharmangadan in 2004. The original scale was consists of 26 subtests regarding occupational stress. But the investigator used adapted version of this test, which consists of 15 subtests. They are Quantitative overload, Qualitative over load, role ambiguity, role conflict, lack of participation, lack of autonomy, group pressure, lack of challenges, lack of control, interpersonal relations, responsibility, promotion job security, alienation, and strenuous physical working conditions. In this inventory there are 77 statements in total. All the 77 statements are classified to these 15 variables as following

Table 3.2.1

**Classification of variables according items**

	Statements	Variables
1.	1 to 6	Quantitative overload
2.	7 to 10	Qualitative overload
3.	11 to 14	Role ambiguity
4.	15 to 21	Role conflict
5.	22 to 26	Lack of participation
6.	27 to 33	Lack of autonomy
7.	34 to 37	Group pressure
8.	38 to 45	Lack of challenge
9.	46 to 49	Lack of control
10.	50 to 59	Interpersonal relation
11.	60 to 62	Responsibility
12.	63 to 65	Promotion
13.	66 to 68	Job security
14.	69 to 72	Alienation
15.	73 to 77	Strenuous physical working condition

**1. Quantitative overload**

This refers to those situations in which an individual is asked to do more work that can be completed in the time available (Kahn & Cooper, 1993). He may be fully content in his work but the time restriction elicits stress reaction. It involves working for long hours with appropriate rest periods as with excessive over time (Bech, *et al.*, 1982).

**2. Qualitative overload**

This occurs when an individual feels lack of skill and abilities needed to perform a given job (Kahn & Cooper, 1993). This work may demand continuous concentration, innovation and meaningful decision. The higher the inherent difficulty of the work, the more stressful the job.

### **3. Role ambiguity**

This exist when an individual has inadequate information about his work role, that is where there is lack of clarity about the work objectives associated with the role, about work, colleague's expectation of the work role and about the scope and responsibilities of the job. Kahn, *et al.*, (cited in Cooper and Payner, 1978) found that man who suffer from role ambiguity experienced lower job satisfaction, higher job related tension, greater futility and lower self confidence.

### **4. Role conflict**

This exist when the job of the individual contain roles or responsibilities which may directly conflict with each other. Thus, there may be conflicting job demands, problems related to conflicts with personal, professional, societal values. Role conflict can result in stress reaction due to frustration and job dissatisfaction.

### **5. Lack of participation**

Margolis *et al.*, (1974) reported that non-participation is the most consistent and significant predictor of strain and job related stress. They found that "non-participation" was significantly related to overall poor physical health, escapist drinking, depressed mood, low self-esteem, low life satisfaction, low motivation, intention to leave job and absenteeism from work (cited in Kahn & Cooper, 1993).

### **6. Lack of autonomy**

Autonomy means the degree to which an individual is free to debate how to accomplish a task, or goals or a job. It however, tends to lessen stress. Specter found that low level of perceived control are associated with low level of job satisfaction, commitment, involvement, performance and motivation

and high levels of physical symptoms, emotional distress, role stress, absenteeism and turnover.

### **7. Group pressure**

This means difficult to make adjustment between outside pressures and the formal rules of the department compel to violate the formal administrative procedures and practices owing to group political pressures and external forces.

### **8. Lack of challenges**

This was found to result in somatic anxiety. Job dissatisfaction and job stress.

### **9. Lack of control**

This is associated with various forms of ill health. Arndt *et al.* (1983) report that secretaries who used word processors and has "external" locus of control were more reluctant to use the equipment. This suggests that, in work situation, "externals" are less willing to adopt new ideas and methods of working, particularly new technology (cited in Khan & Cooper, 1993).

### **10. Interpersonal relations**

The presence of relationships at work can be both a stressor and a source of support. The stress effects of relationship of work have been examined by viewing relationship on hierarchical basis. Heavy demand for cooperation with superiors and subordinates has been shown stressful white-collar workers.

## **11. Responsibility**

It has been found that responsibility for people was significantly more likely to lead stress. Increased responsibility for people frequently means that one has to spend more time interacting with others, attending meeting, working alone etc. (Cooper & Payner 1978).

## **12. Promotion**

This almost certainly will lead to important changes in job function which may involve increased responsibility for people and production. Brook say that both over promotion and under promotion result to mental illness. Both this may result in minor psychological or major psychosomatic symptoms (Kahn & Cooper, 1993).

## **13. Job security**

Job security means the level of threat of job loss or unemployment. It is associated with health problems, including ulcers, colitis, increased muscular and emotional complaints. These outcomes may be aggravated when no suitable alternatives appear to be available or when retraining is necessary to obtain new position.

## **14. Alienation**

This refers to Psychological state of dissatisfaction with an estrangement from the prevailing social arrangements in which the individual lives and the norms and values that regulate these arrangements. It is a reaction to prevailing social conditions. Fraunce (1968) proposed that powerlessness, meaninglessness and formlessness are predisposing conditions to alienation (Sherif & Sherif, 1969).

## 15. Strenuous physical working condition

Strenuous physical working condition like tense circumstances, physical changes in work, lonely and uncomfortable duties and adverse physical conditions are very stressful in the job.

### Reliability

Reliability was established for each and every subtest, which are given below.

Table 3.2.2

#### Reliability of 15 subtest of occupation stress

Sl. No.	Variables	Cross Section estimate or reliability task	Split-half reliability (corrected for alternation)
1.	Quantitative Overload	.81	.83
2.	Qualitative Overload	.69	.76
3.	Role ambiguity	.70	.71
4.	Role conflict	.88	.88
5.	Lack of participation	.85	.74
6.	Lack of autonomy	.84	.76
7.	Group of pressures	.81	.71
8.	Lack of challenges	.80	.69
9.	Lack of control	.78	.69
10.	Interpersonal relations	.91	.91
11.	Responsibility	.83	.70
12.	Promotion	.67	.75
13.	Security	.68	.90
14.	Alienation	.81	.89
15.	Strenuous physical working condition	.78	.71

## **Validity**

The test was validated against the occupational stress Index (Srivastava & Singh, 1981). The correlations between the 12 subscales of the occupational stress index were found to have significant correlation with the corresponding subscales of this text ('r' range from 0.56 to 0.85). The coefficient of correlation between the total stress scores of the two tests is found to be 0.93.

The test was validated also against the job anxiety scale (Srivastava & Singh 1979). The scores in all the sub tests as well as the total stress score were found to correlate significantly with the different sub scales of the job anxiety scale ('r' range from 0.74 to 0.90).

A copy of the inventory is appended in appendix III.

### **3.2.4. Hamilton Depression Inventory (HDI) (Hamilton, 1967)**

The Hamilton Depression inventory is a self report measure designed for the evaluation of the severity of depressive symptomatology. It is developed to assess the severity of depression in adults and to provide clinicians with useful information for making decisions about a person's mental health, as well as to provide researchers with an effective measure for enhancing the understanding of depression. It measures a range of symptomatology associated with depression, including cognitive, motoric-vegetative, somatic and interpersonal symptoms.

As it is mentioned the scale is designed for the use with adults, including those in clinical such as inpatient clinics and hospitals, outpatient clinics, private practice and as well as in non clinical such as young adults in colleges, adults in community based therapeutic groups, adult applicants for various occupations, research investigations etc. (Reynolds and Kobak, 1995).

The full-scale HDI consists of 23 items that are evaluated by 38 questions, with some items having between two and four questions that are weighted to provide an item score. The basic HDRS (Hamilton Depression Rating Scale) item content includes contemporary symptoms of depression as delineated by the DSM-IV. In addition to the basic 23 items of HDI, a 17 item form (HDI-17) and HDI melancholia (HDI-Mel) subscales are derived.

**The full scale HDI:** The full scale HDI is the recommended form for the clinical evaluation of the severity of depressive symptoms in adults. The full-scale HDI consists of 38 questions that provide scores for the 23 symptom related items. These items consist of between one and four questions that evaluate the severity and/or frequency of specific depressive symptoms. The use of multiple questions for some items are somewhat unique and as noted earlier, was formulated to provide greater depth of symptom examination. Then items include: hypersomnia, detachment, depersonalization, feelings of worthlessness, helplessness, impaired daily functioning, hopelessness and difficulty to making decisions etc.

**The HDI-17:** The original formulation of the clinician administered HDRS by Hamilton (1960) consisted of 17 items. The HDI-17 consists of the first 17 items of the HDI, with items scored the same way as on the full-scale HDI. In this way a score on the 17-item form is obtained from the administration of the HDI. It is measuring the clinical level of depression.

**The HDI-Melancholia:** The HDI-mel consists of nine items that are inclusive of melancholic features delineated by DSM-IV. Melancholia refers to an endogenous form or subtype of depression that tends to be of a more biological nature.

### **Reliability**

Internal consistency reliability established for the HDI, HDI-17 and HDI-mel were based on the total HDI development sample and separately by

sex by using Cronbach's coefficient alpha. Internal consistency reliability coefficients for the total sample are very high for all forms ranging from .90 for the HDI-17 to .93 for the full scale HDI. These internal consistency reliability coefficients may be considered high for a brief, self-report measure of adult depressive symptomatology. The internal consistency reliability coefficient of the HDI-mel was lower than that found for the various forms of the HDI. And the coefficients were equivalently high for males and females. For males it is ranged from .91 on the HDI-17 to .94 on the HDI and for females it is ranged from .90 on the HDI-17 to .93 on the HDI. In addition to this a high test retest reliability coefficient was also found for the HDI, HDI-17 and HDI-mel. These reliability coefficients ranged from .93 to .95 for the various forms of the HDI, with a heterogeneous clinical and non clinical sample of 189 adults. Who were retested approximately one week after an initial assessment with the HDI.

### **Validity**

The HDI was developed to provide a reliable and valid self-report measure of the severity of depressive symptomatology in adults, consistent with the extensively researched and used HDRS clinical interview. Multiple forms of validity are established such as (a) content validity, (b) criterion related validity in the form of concurrent validity, (c) construct validity, as evaluated by convergent, discriminant, and factorial validity (d) clinical validity as demonstrated by constructed groups validity and (e) clinical validity of the HDI cut off scores as demonstrated by examinations of the clinical specificity, sensitivity and diagnostic efficacy of the HDI cut off score.

A copy of the inventory is attached in appendices (appendix IV).

### **3.2.5. Personal Data Sheet**

Details of the subjects, like information about their personal and demographic variables were collected, using a personal data sheet prepared by the investigator. Additional information regarding personal and familial clinical history, treatments, physiological and psychological disabilities and occupational history etc., were also included. A copy of the personal data sheet is attached in appendices (appendix V).

### **3.2.6. Unstructured Interview**

Interviewing is an essential part of most types of social science research. Interviewed data allows maximizing the chances to maintaining objectivity and achieving valid and reliable results. Interviews can be used at any stage in the research process. They can be used to identify areas for more detailed exploration and it can be as the main vehicle of data collection.

Here the investigator used unstructured interview method to collect more information regarding their nature of duties, responsibilities, problems they are facing, job satisfaction level, their feelings and so on. Moreover, it was only a casual talk with them. And their responses were noted down by the investigator.

### **3.3. Procedure and Administration**

First of all, the investigator very purposively met the hospital's superintendents and management for seeking permission for data collection from their nursing staffs. After getting permission, the investigator personally met each nurses and all the test materials were administered one by one after establishing rapport. All the participants were also instructed about the confidentiality of the data.

The tools used in the present study viz., IAS Rating scale, Multiphasic hostility inventory, Occupational stress inventory and Hamilton depression inventory. Instructions for responding to the statements were printed in the tools itself very clearly. Even then the investigator gave oral instructions to the subjects in view of getting better responses. The style of responding is varied from one scale to the other. The following are the instructions given to the subjects.

### **3.3.1. Instruction for Mathew IAS Rating Scale**

The instructions for making responses are in the scale. Separate answer sheets were provided to mark the responses of the subjects. Oral instructions were provided as follows: In the booklet provided to you 35 behavioral qualities are written. For each item three different specifications are also explained. You see, what all explanations are applicable in your case, that is, what all specifications are true in your case. If all the three are true in your case give a score of '1' to all the three. If two among them are true in your case, give a score of '2' for the behavior which is more intense. A score of '1' can be provided to the other. If only one of them is applicable to you or to your behavior, you give a score of 3 for that sub-item. That is, the total of the sub item scores will be '3' in any case. You can mark your response in the separate sheet provided but do not evaluate their different personality aspects by themselves.

### **3.3.2. Instruction for Occupational Stress Inventory**

Instructions were printed in the inventory and the subjects can mark their answers for each item directly in the columns given in the right hand side of the inventory. Oral directions were given as follows. There are 77 statements in the given booklet. The items are career life oriented stress measuring statements. You have to read each and every statement very

carefully and mark your sudden responses in the given columns by writing A/B/C/D/E according to your choice for each statement. If you are strongly agreed with the statement put 'A' in the column, like that 'B' for 'agree', 'C' for 'undecided' 'D' for 'Disagree' and 'E' for 'strongly disagree'. Try to answer all the statements.

### **3.3.3. Instruction for Hamilton Depression Inventory**

The directions for doing this HDI inventory are printed in the booklet. It can be administered in either individually or in group testing situations. In both situations, the testing should be conducted in a reasonably private setting. Whether it administered individually or in small groups, are full scale requires approximately 10-15 minutes for completing. It should not be introduced to the respondent as a depression measure. In fact, it may be advantageous to introduce the HDI as a questionnaire designed to assess the individual's recent behavior and feelings. Oral instructions were as follows. Write your name and other personal details in the given space of provided answer sheet. The total 23 and its sub statements are asking about your current feelings and behavior. Read each questions and select the answer that best describes your behavior or how you have been feeling for the past 2 weeks. Darken or put '✓' mark in the circle with the number on your answer sheet that corresponds to the answer you have selected. Please mark your answer in only one circle for each question. Do not make any marks or write in the given booklet. If you wish to change your answer on the answer sheet, put an 'x' mark through the incorrect circle and fill in the correct circle. Do not erase. Be sure to answer each question. Do not leave any question blank unless the instructions tell you to skip that question.

### **3.4. Scoring**

The collected response sheets were first checked for incomplete responses, which were excluded from the data set. The responses, which were complete in every sense, were scored according to the scale, as described below.

#### **3.4.1. IAS Rating Scale**

The answer sheet of IAS rating scale was checked for omission. It is recommended that an answer sheet with more than 2 omissions should not be scored. Then it can be checked where the total points of each item is 3. To attain the separate scores for three different dimensions, Inertia, Activation and Stability, the scores in each column can be added, the total of all the score should be 105, if no item is omitted.

#### **3.4.2. Occupational stress Inventory**

The scoring was done as follows. A score of 5,4,3,2 and 1 is given to category of A, B, C, D and E respectively in the case of positive statements. In the case of negative items the score is given in the reverse order. Each stress variable was taken separately and score was added by which level of stress of individual to each variable can be found. By adding the total scores of all variable the overall occupational stress level of individual can be found.

#### **3.4.3. Hamilton Depression Inventory**

Three types of scores were taken for the study, which are HDI-raw score, HDI-17 score and HDI-melancholia. Therefore three types of scoring procedures are also. All the scoring was done with the help of manual.

#### **(i) HDI-raw score**

Sum the value of the responses of questions from 1-23 the scores of sub questions also with the help of the manual. The total raw scores for all summary indexes (*ie* HDI, raw scores, HDI-17 and HDI-mel) are rounded to the nearest half point. The possible range of raw score is '0 to 73. HDI-raw score's cut off point is 19.0.

HDI-Raw score is providing valuable clinical information on current levels of depressive symptomatology. A high score of the HDI indicates that the individual endorsed significant symptom of depression.

#### **(ii) HDI-17 score**

HDI-17 score on the 17-item form is obtained from the administration of the HDI. The scoring is being close with the help of the manual. The obtained score is interpreted for the clinical depression and diagnosing the severity of depressive symptoms. And this HDI-17 is used for reducing the incidence of false negative decisions. The raw score on the HDI-17 may range from 0 to 52. The cut off score for the community sample is 15.0.

#### **(iii) HDI-mel score**

The HDI-mel score on the selected nine items are also obtained from the full HDI-scale. It is measuring the severity of syndrome, depression and subtype of depression. In this study, the investigator noted only the severity of depression. Scores on the HDI-mel can range from 0 to 29. The cut off score for the community sample is 16.0.

### **3.4.4. Interview Report**

A total of 28 nurses were interviewed. Among them 14 are from various government hospitals and the rest of 16 are from various private

hospitals. Analysis of unstructured interviews is time consuming and difficult. So the collected information was subjected to content analysis and which is not mentioned and discussed separately in the concerned chapter 'Results and Discussions'. Whereas it is reported along with the interpretations of all other analysis for substantiating the results.

### **3.5. Research Design**

Research designs are invented to enable the researcher to answer research questions as validly, objectively, accurately and economically as possible. The structure of the research is more specific. It is the outline, the scheme, the paradigm of the operation of the variables. It also includes the methods to be used to gather and analyze the data (Sapsford and Jupp, 1996). The present study is framed with passive observational research design.

### **3.6. Statistical Analysis**

The important statistical techniques used in the present investigation to facilitate the analysis and interpretation of the data are presented below.

#### **3.6.1. Correlation**

A coefficient of correlation is a simple index that represents the relationship between two variables. It can be computed in different ways depending on the nature of the data. The standard kind of coefficient of correlation and the one most commonly computed, is the Pearson's product moment co-efficient (Pearson's 'r'). Pearson's 'r' was employed in the present study to estimate the inter relationship among the variables of IAS personality dimensions, Multiphasic hostility and its sub variables, Occupational stress and its sub variables and Hamilton depression raw score and the sub types. The significance of the obtained 'r' was compared with the limits established using the standard error of 'r' which is calculated for 0.1%, 1% and 5% level.

The product moment correlation between any two variable can be described in a general way as high, marked or substantial and low or negligible. Garrett (1969) presents the following classification for interpreting the various values of 'r's.

r from 0.000 to +/-0.20 denotes negligible relationship.

r from +/- 0.20 to +/- 0.40 denotes low correlation present.

r from +/- 0.40 to +/- 0.70 denotes substantial relationship.

r from +/- 0.70 to +/- 1.00 denotes high to very high relationship.

### **3.6.2. Analysis of variance – Two -way**

The analysis of variance is a statistical technique for analyzing measurements depending on several kinds of effects, operations simultaneously to decide with kinds of effect are important to estimate the effect.

The comparison of the mean difference among three or more groups is usually done using analysis of variance. When the samples are classified on the basis of two variables, the technique is called two-way ANOVA. In two or more way ANOVA, interaction among the classificatory variable may also be estimated. When the F value obtained in the analysis is statistically significant, it indicates that there are significant mean differences among the groups in the dependent variable. In this study the two-way classification of the sample was based on groups of personality dimensions (Inertia, Activation, and Stability) and ANOVA was employed to find out significant differences in the mean scores on all the study variables. The technique was specially suited to separately find out the difference and interaction between all the classificatory variables.

### 3.6.3. Multiple Regression Analysis

It is a method for studying the effects and the magnitudes of more than one independent variable on one dependent variable using principles of correlation and regression (Kerlinger, 1998). In this analysis, there is a criterion variable and a minimum of two predictor variables. The analysis enables to determine not just the fact that these two or more variables predict, but the relative strength of the predictions. The strengths are reflected in the multiple regression formula, such as

$$y = a + b_1x_1 + b_2x_2. . . . . + b_nx_n$$

Where each 'x' is a different predictor variable, 'y' is the criterion, and 'b's (called beta weights) are the relative weightings given to each predictor (Goodwin, 1995).

In a "stepwise" regression approach, variables are added (or removed) one at a time from the independent variable until/there is non significant change in the value of R. Also, sets of variables may be added (or removed) to evaluate their contribution to the multiple correlation, and are 'F'-test done to determine if their effect is statistically significant. Non linear relationships may be evaluated by including higher order terms (eg  $x_1^2$ ) and/or multiplication terms (eg.  $x_1, x_2$ ) on the right-hand side of the equation.

Some common uses for multiple regressions are:

- (i) To obtain the best linear prediction equation
- (ii) To control for confounding variables
- (iii) To evaluate the contribution of a specific set of variables.
- (iv) To account for seemingly complex multivariate interrelationships
- (v) To perform analysis of variance and covariance by coding the levels of the independent variable.


In the present study, step-wise regression analysis were performed to find out the predictors of occupational stress, depressive symptomatology (HDI-raw score), clinical depression (HDI-17 score) and severity of depression (HDI-mel).

#### 3.6.4 t- test analysis

This is the statistical test appropriate for judging the significant of a mean or judging the significant of difference between means of two samples (Garette, 1969). t-test can be applied in three firms. Small sample, large sample and correlated.

The t-test is based on t- distributions if the calculated 't' value exceeds the cut-off point (depending on the degrees of freedom) the difference between the means is considered significant. When the t-value is below the critical value, the difference is said to be significant.

Here t-test analysis was demonstrated to find out the significant difference with occupational stress in 3 types of depression scores.



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# TEST CONSTRUCTION

Biji Mathew “Workplace depression: An analytical study” Thesis. Department of Psychology , University of Calicut, 2007

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*Chapter IV*

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*Test Construction*

- ❖ Introduction
- ❖ Definition and Explanation of terms
- ❖ Hostility dimensions.
- ❖ Item construction
- ❖ Administration and Method of responding.
- ❖ Method of scoring
- ❖ Item analysis and selection of items for final scale
- ❖ Sample for the item analysis
- ❖ Item selection
- ❖ Item selection for final scale
- ❖ Item dimensions
- ❖ Reliability
- ❖ Validity

There are certain traits in human character and personality that makes one authoritarian, aggressive or hostile. These are all important from social as well as health backgrounds and are necessary to be studied in depth for correct understanding of their influence in different problems and for certain corrective actions (Kool, 1980). Hostility is a normal human reaction to the perceived threat or to the experience of high discomfort or pain. The source of the threatened pain may be internal or external or both at once. People with certain mental health disorders or symptoms are more likely to commit aggressive acts than the general population. Certain aspects of hostility are high in some personalities and also in some disorders. Smith (1994) found that hostile persons are more likely to be vigilant for possible conflicts in their environment, and are more likely to respond in a physiologically exaggerated style to their stressors.

Hostility may turn either inward (against the self) or outward (against others). Generally speaking hostility, fails inwards when some necessary functions like socialization are required for helping the super ego, it turns outward in service of the ego in order to gain something. Unfortunately, the M.M.P.I subscales which measure different aspects of hostility fail to correlate systematically with each other. Therefore it seems that the available M.M.P.I. indices are not well established empirically in reflecting all aspects of hostility (Kool, 1980).

There are many types of measurements reported in the literature like Irritability scales of the hostility Inventory used for self rating by Buss and

Durkee (1957), but the scale measured only anger and cynicism factors of hostility. And the other 3-item scale for hostility, derived from Koskenvao *et al.* (1988) aimed to measure anger - proneness, irritability and argumentativeness only by using the method of self-rating. The most popular and widely used Cook and Medley (1954) hostility scale measures only anger, cynicism, suspiciousness and other negative traits.

Interpersonal conflict seems to be a good predictor of increased physiological arousal in hostile individuals (Felsten and Leitten, 1993; Seigman *et al.*, 1992). While reviewing many hostility measures, it is noted that, they are measuring only limited components of hostility. Thus hostility assessment should be multimodal with a focus on expressive hostility and should involve an interpersonal challenge (Steinberg and Jorgensen, 1996; Thoresen and Powell, 1992; Pope *et al.*, 1990; Smith and Frohm, 1985; Smith Sanders and Alexander, 1990).

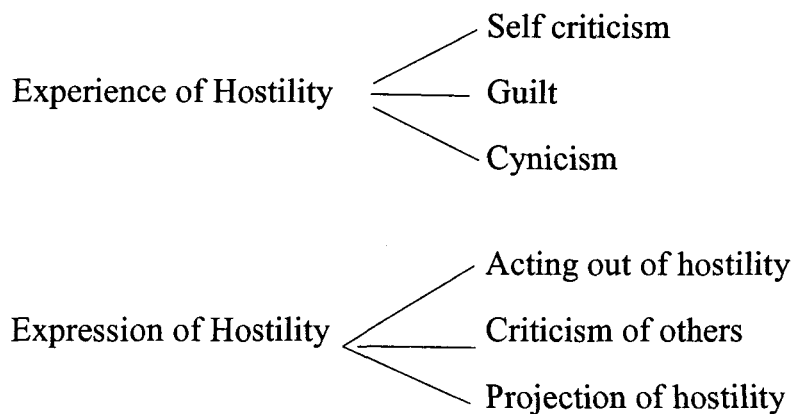
Hostility is a multi-dimensional construct, which includes affective, cognitive and behavioral components. Thoresen and Powell (1992) and Steinberg and Jorgensen (1996) point out the multi-dimensional nature of hostility and the need for the development of multimodal measures for hostility. Thus the investigators focused here on the development of affective, cognitive and behavioral components of hostility.

### **Definition and Explanation of the terms**

Hostility can be operationally defined as a constellation of action and feelings directed toward others and the self (Cook and Medley, 1954). It is also considered as an emotion in which an individual is seen as being in opposition to others, with a desire to harm or to negatively impact others and the feelings that problems in the individuals life are due to others interference (Saul, 1956).

Hostility is a broad concept that encompasses many traits in an individual. Tribarren (2000) had found hostility include anger, cynicism, mistrust of others and aggressive behavior. Danka *et al.* (2000) argued that hostile behavior include anger out, anger in and negative effect which will influence individual's coping styles. In the same way Chipley (2000) had written that three aspects of hostility are cynicism, aggressive responding to problem and negative feelings toward others. Hostility is characterized by suspiciousness, resentment, frequent anger, antagonism and distract of others (Barefoot *et al.*, 1989).

Based on the review of literature, the investigators classified hostility into two dimensions which are experience and expression of hostility. *Experience* of hostility is a subjective process including angry feelings or cynical thoughts and the *Expression* of hostility is more observable component which includes acts of verbal or physical aggression (Siegman, 1994). Here in the scale hostility dimensions are classified as following.



### **Experiences of Hostility**

**Self Criticism** - It is an act of making judgment towards oneself, analyzing one's own qualities and evaluation of comparative worth, especially the initial consideration and judgment of behavior, interactions and literary or artistic work. It also includes reviewing one's own self and making comments, an act

of finding fault with unsure and disapproval of one's own behavior, reprehend, suggesting sharp sense of disapproval, generally of faults or errors made by one self, poor judgment, empathic pronouncement of blame, accusation against self for their acts and stresses by fixing up responsibility of errors.

**Guilt** - A state of having done a wrong or committed an offense, culpability or it is a painful feeling of self reproach resulting from a belief that one has done something wrong, immoral, crime or sin.

**Cynicism** - Believing that people are motivated in all their actions only by selfishness, denying the sincerity of people's motions and actions or values of living. Also including sarcastic, sneering, contemptuous belief in people's or human goodness and sincerity, deep seated hatred or distrust of people in general, implies an attitude often general of expecting the worst to happen, becoming pessimistic about one's chances of winning and becoming negativistic in behavior, actions, beliefs and ideas.

### **Expressions of Hostility**

**Acting out of Hostility** - Direct expression of the negative feeling inside which, it has got a cynical background. To act out hostility people usually do some movement or perform something to express the hostility inside, Implement a decision to harm others through words or deeds to express the negative feeling inside toward them, Organize ideas and procedures to insult others and implement them and actively taking part in the procedures of hurting others with an intention to express our negative feelings.

**Criticism of others** - Over judgementative of others deeds, words and ideas; especially with fault finding aim and also compare worth qualities and values of others behavior, compare literary and artistic works etc of others, especially with an aim of finding errors, mistakes etc. Abundant blame, sharp

disapproval of other's actions by analyzing and pointing out mistakes and over emphasis up on others faults and omissions during judgments.

**Projection Hostility** - Hostile deeds of one self are projected identified and read in others as the causal factors of ones own unluck, the world conditions and other negative situation. Reading the mankind as such bad, angry and hostile, find others as mistrusty, unbelievable, unlovable etc.

### **Item construction**

The success of psychometric test depends largely upon the construction of effective and objective items which is composed and for the same the following points were taken for consideration.

- ❖ In order to reduce overlapping among items it was decided to write items in sub variable wise.
- ❖ To ensure explicit items of the scale, it was written in such a way that can be simply comprehended by individuals having even moderate knowledge of either Malayalam or either English language.
- ❖ Similar words or sentences from one item to another were avoided.
- ❖ It was also kept in mind that scale would not be lengthy one that it takes only a reasonable time in its completion.
- ❖ Care was taken to include negative items for counterbalancing the response.

There was an initial pool of 76 items for the entire scale. The entire set of items was given to psychologists, sociologists, medical practitioners, clinical psychologists, social workers and educationalists for the suggestions and modifications of the content and language.

## **Administration and Method of Responding**

A clear instruction in very simple language both in Malayalam and English, were prepared and printed on the first page of the scale so that each subject might be able to follow them before he or she starts responding to items. The items are also written both in Malayalam and English languages. Responses on the items were elicited in terms of 5 point Likert Scale, such as "Always true," "usually true," "sometimes true", "seldom true" and "never true." The subjects were provided with separate space on the questionnaire to mark their answers. The subject could mark his/her responses for each item by putting a tick (✓) mark in corresponding space given for each item.

## **Method of Scoring**

Positive and negative items were scored separately for each dimension. Items measuring particular dimension positively and responded as "Always true," "usually true," "sometimes true" "seldom true" and "never true" were given the scores of 5, 4, 3, 2 and 1 respectively. And the scoring was in the reverse order for negative items. The item number 7, 14, 17, 18, 25, 29, 31, 33, 38 and 45 were treated as negative items and the rest of the items were positive.

## **Item analysis and selection of items for final scale**

The first major objective of an item analysis is to obtain objective information concerning the items written for the test. This information is valuable for the test author's subjective judgment for selecting the final items to compose the test and helping to modify or redefine the items. Test writer learns how examinees react to items in general and to the each items of the test in particular way. By starting with a surplus number of items, the investigator could save the items that look better in terms of item-statistics.

## Sample for the item analysis

Samples of 600 subjects from different age group, occupation, culture, education, income, status etc., randomly were selected from different districts of Kerala. Gender and health status were also considered.

## Item selection

The total score obtained for each variable by each individual has been obtained by finding the sum of the scores of each item in the subscale. These were subjected to statistical analysis.

Item analysis was done as per the method suggested by Edwards (1969). The 600 respondents were scored and arranged in the descending order of the scores. The upper and lower 25% of the sample were treated as upper and lower group, respectively.

The frequency of response is mean to analyze by considering each item. Then the 't' value of each statement was calculated to find out discriminating power. The value of 't' is a measure of the extent to which a given statement of hostility differentiate between the high and low group. The 't' value was calculated using the formula.

$$t = \frac{\bar{X}_H - \bar{X}_L}{\sqrt{\frac{\sum (X_H - \bar{X}_H)^2 - \sum (X_L - \bar{X}_L)^2}{n(n-1)}}$$

XH = The mean score of the given statement for high group.

XL = The mean score of the given statement for low group.

n = Number of cases

$$\sum (X_H - X_L)^2 = \sum X_H^2 - \frac{(\sum X_H)^2}{n}$$

$$\sum (X_H - X_L)^2 = \sum X_H L^2 - \frac{(\sum X_L)^2}{n}$$

**Item selection for the final scale**

Table 4.1.1

**Multiphasic hostility inventory: t-values of the draft scale**

Item No.	t-value	Item No.	t-value	Item No.	t-value
1	6.56**	26	2.33**	51	4.64
2	2.34**	27	5.34	52	6.98**
3	8.17**	28	7.15**	53	8.02**
4	4.47	29	5.70**	54	10.12**
5	4.67**	30	0.95	55	8.69**
6	1.46	31	8.02**	56	6.92**
7	3.74	32	3.56	57	10.28**
8	11.57**	33	1.40	58	5.57**
9	0.54	34	1.60	59	7.54**
10	1.53	35	5.30	60	7.37**
11	8.30**	36	6.49	61	5.21
12	6.97**	37	7.00**	62	8.21**
13	0.95	38	10.07**	63	6.93**
14	3.97**	39	7.19	64	6.07
15	5.74	40	6.20	65	6.57**
16	10.60**	41	4.90	66	3.12
17	6.64**	42	9.79**	67	9.21**
18	6.82**	43	6.66	68	5.45
19	10.16**	44	6.98**	69	3.91
20	6.39	45	8.24**	70	6.86
21	5.94**	46	9.68**	71	6.55
22	1.75	47	10.92**	72	6.81**
23	6.18	48	9.11**	73	3.17
24	7.73**	49	7.00**	74	4.00
25	0.47	50	8.12**	75	6.99**
				76	8.43**

\*\*significant at 0.01 level.

The items which are marked with Star (\*\*\*) are significant at 0.01 level, are selected for the final scale. And these items are having high discrimination power for measuring each dimension of hostility.

## Item Dimension

Table 4.1.2

### Multiphasic hostility inventory final: item dimensions

Dimensions	Items
Self criticism	1, 3, 6, 7, 11, 12, 17
Guilt	2, 8, 13, 16, 18
Cynicism	4, 5, 9, 10, 14, 15, 19, 20, 21
Acting out	22, 23, 28, 29, 34, 35, 40, 41
Criticizing others	24, 25, 30, 31, 36, 37, 42, 43
Projection of hostility	26, 27, 32, 33, 38, 39, 44, 45

## Reliability

The reliability of the scale was determined by odd-even reliability method. The scale was measured for its odd even reliability by administering up on a group of subjects (N=60) including male and female of 18-58 years. The product moment correlation between the tests was found to be 0.75.

## Validity

The scale was validated against an external criterion that is Hostility Scale (Baby Shari and Baby, J. 2004). It was administered to a representative sample of 60 and the scores were collected. The sample was administered multiphasic hostility scale along with Hostility Scale. The first sets of squares were correlated against the set of scores obtained from the same sample by administering the Hostility Scale as an external criterion. The correlation coefficient obtained was 0.64.

The face validity of the scale has been assured by many experts in the field. The predictive validity of the scale is assured as all items in the final scale have high discrimination power revealed by the significant 't' values during item analysis.

# RESULTS AND DISCUSSION

Biji Mathew “Workplace depression: An analytical study” Thesis. Department of Psychology , University of Calicut, 2007

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*Chapter V*

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*Results and Discussion*

The chapter 'Results and Discussion' presents the results found out by the investigator through statistical analysis of the data collected. The different statistical designs such as correlation analysis, step wise regression analysis, two-way ANOVA and 't'-test analysis are used to analyze the data. And the results obtained were discussed very elaborately under the classification of 6 sections. The following are the sections:

Section I - Relationship of study variables

This section includes 10 parts.

Section II - Predictors of occupational stress.

Section III - Predictors of depression

In this section, the analysis of predictors of depression is again classified into three, that is:

Part A - Predictors of HDI – raw score (depression symptomatology)

Part B - Predictors of HDI – 17 score (clinical depression)

Part C - Predictors of HDI – melancholia (severity of depression)

Part D - Comparison between predictors of HDI- raw score, HDI-17score and HDI-melancholia.

Section IV - Interaction effect of personality and job related demographic variables on study variables

Here also the analysis and discussion is followed accordingly by the categorization of 7 parts.

Part A - years of service

Part B - marital status

Part C - religion

Part D - qualification

Part E - service sector

Part F - age

Part G - hostility groups

Section V - Interaction effect of personality, hostility and occupational stress on 3 types of HDI – scores.

Section VI - Comparison between groups of occupational stress and 3 types of HDI scores.

SECTION I

*Relationship of Study Variables*

A series of correlation were calculated among the variables under study namely, three dimensions of personality (Inertia, Activation and Stability), Multiphasic hostility and its sub variables, occupational stress and its sub variables and depression scores are presented in table 5.1.1, table 5.1.2, table 5.1.3, table 5.1.4, table 5.1.5, table 5.1.6, table 5.1.7, table 5.1.8, table 5.1.9 and table 5.1.10 respectively.

**Part A Relationship of IAS dimensions.**

**Table 5.1.1  
Inter correlation between inertia, activation and stability**

	Inertia	Activation	Stability
Inertia			
Activation	-.45***		
Stability	-.72***	-.28***	

\*\*\* Significant at 0.001 level.

The personality dimensions, inertia, activation and stability were studied among the nurses (N=338) and they were correlated one another. All these dimensions are negatively and significantly correlated with each other. Inertia is negatively correlated with both of the other personality dimensions, activation and stability. Stability and activation are also negatively correlated with each other. The highest correlation is between stability and inertia ( $r = -.72$ ) which is significant at 0.001 level. It indicates that as stability increases inertia decreases and in vice versa.

Correlation between activation and inertia; and stability and activation are also significant at 0.001 level. It means that, as stability increases activation decreases, and activation increases stability and inertia decreases. Mathew's theory also supports this finding. According to Mathew (1995) the IAS Rating scale measures the relative predominance of these three characteristics in an individual.

**Part B. Relationship among multiphasic hostility and its subvariables**

**Table 5.1.2**

**Inter correlation between over all multiphasic hostility and its sub variables**

	SC	G	Cy	A.O	C.O	PH	Over all M.H
Self Criticism							
Guilt	.17***						
Cynicism	.59***	.32***					
Acting out	.11*	.00	.18**				
Criticizing others	.27***	.28***	.42***	.10			
Projection hostility	.40***	-.11*	.35***	.11*	.08		
Over all Multiphasic hostility	.66***	.40***	.79***	.21***	.57***	.52***	

\*\*\* Significant at 0.001 level, \* significant at 0.05 level.

Inter correlation between over all multiphasic hostility and its sub variables such as self criticism, guilt, cynicism, acting out, criticizing others and projection hostility was calculated. From the correlation matrix of the sample (table 5.1.2), out of the 21 correlations 18 are significant correlations. Among these, 15 correlations are significant at 0.001 level and 3 are

significant at 0.05 level. Only one correlation is in a negative direction and rests of the 17 are positively related with among variables. The highest correlation was found between cynicism and over all multiphasic hostility ( $r=0.79$ ) and the least correlation was found between guilt and projection hostility ( $r = -.11$ ).

The correlation between among the sub variables of multiphasic hostility the highest correlation is between self criticism and cynicism which means that when self criticism increases cynicism also increases. And the relation between sub variables of hostility and over all multiphasic hostility is all positively correlated and significant at 0.001 level. It indicates that over all multiphasic hostility is increased with the increment of its sub variables.

**Part C. Relationship among occupational stress and its sub variables**

**Table 5.1.3. Inter correlation between over all occupational stress and its sub variables**

	Qt OL	QL OL	RA	RC	LP	LA	GP	LC	LCI	IR	Ry	Pn	JS	An	SPW C	Over all O.S
Quantitative over load																
Qualitative over load	.34**															
Role ambiguity	.26***	.35***														
Role conflict	.37***	.32***	.57***													
Lack of participation	.08	-.03	.25***	.23***												
Lack of autonomy	.12*	.10	.16***	.22***	.40***											
Group pressure	.32***	.21***	.35***	.47***	.22***	.20										
Lack of challenge	.23***	.05	.41***	.57***	.42***	.29***	.47***									
Lack of control	.18***	.11*	.22***	.09	.28***	.18***	.13*	.17***								
Interpersonal relationship	.31***	.16***	.41***	.54***	.46***	.34***	.42***	.62***	.15***							
Responsibility	.19***	.07	-.09	-.13*	-.28***	-.26***	.03	-.17***	-.01	-.20***						
Promotion	.24***	.18***	.26***	.44***	.32***	.28***	.39***	.52***	.16***	.51***	-.19***					
Job security	.24***	.04	.18***	.30***	.30***	.14*	.26***	.39***	.13*	.41***	-.09	.31***				
Alienation	.20***	.17***	.46***	.44***	.13*	.16***	.29***	.34***	.15***	.34***	-.01	.40***	.26***			
Strenuous physical working condition	.39***	.21***	.35***	.41***	.21***	.33***	.24***	.37***	.20***	.39***	-.09	.40***	.39***	.49***		
Over all occupational stress	.53***	.36***	.59***	.72***	.49***	.45***	.56***	.69***	.28***	.77***	-.09	.64***	.43***	.56***	.61***	

\*\*\* Significant at 0.001 level.

\* Significant at 0.05 level.

Correlation Matrix of occupational stress and 15 sub variables of the total sample is presented in table 5.1.3. The 15 subvariables includes quantitative overload, qualitative overload, role ambiguity, role conflict, lack of participation, lack of autonomy, group pressure, lack of challenges, lack of control, interpersonal relations, responsibility, promotion, job security, alienation and strenuous physical working conditions. Out of 120 correlations 98 are significant at 0.001 level and 7 are significant at 0.05 level. Out of these total 105 significant correlations 6 are in negative directions. The highest correlation observed between interpersonal relations and over all occupational stress ( $r=.77$ ) and the least correlation is between qualitative overload and lack of control ( $r=.11$ ).

Out of 15 sub variables 14 are positively correlated with the over all occupational stress, which means that the increased scores in the sub variables are increased with over all occupational stress. But the variable responsibility is only negatively correlated with promotion. It also means that, the test which is used for measuring - occupational stress is very effective for the sample. The results are supporting with the findings of the authors of the inventory (Joseph *et al.*, 1986). That is all the items used for measuring the stress level of each sub variable are highly reliable and validated.

The results are also supporting the studies with the findings of Cooper (1976), Singh and Singh (1992), Joshi and Sangavi (2000), Singh *et al.* (2001), Upadhyay and Singh (2001), Gillespie *et al.* (2001), Bhatia and Kumar (2003), Das and Singhel (2003), Dillenburger (2004) etc. are found that work overload, role conflict, role stress, job insecurity, job autonomy, interpersonal relationship, responsibility, lack of participation, unhealthy climate, role ambiguity, lack of career development opportunities etc are highly related with occupational stress.

**Part D. Relationship among HDI – scores (depression)**

**Table 5.1.4**  
**Inter correlation between depression scores**

	HDI raw score	HDI-17 score	HDI-melancholia
HDI raw score			
HDI -17 score	.93***		
HDI - melancholia	.92***	.95***	

\*\*\* Significant at 0.001 level.

Inter correlation between Hamiltons Depression Inventory raw score (HDI-raw score), Hamilton Depression Inventory-17 score (HDI-17) and Hamilton Depression Inventory melancholia (HDI-melancholia) were also calculated (see table 5.1.4). A high raw score on the HDI indicates that the individual endorsed significant symptoms of depression. HDI-17 score is the criterion score for diagnosing clinical depression and which is helping to reduce the incidence of false negative decisions. Where as the high score on the HDI-melancholia is measuring the severity of symptoms or sub type of depressions.

The correlation values obtained are highly and positively correlated with one another and all are significant at 0.001 level. The highest correlation is between HDI-melancholia and HDI-17 score (.95) is indicating that, when the HDI-melancholia increases HDI-17 also increases. The other positive correlations between HDI-17 score and HDI-raw score; and HDI-melancholia and HDI-raw score are suggests, that, when the HDI-17 and HDI-melancholia scores increases the HDI-raw scores also increases. The results are in line with the findings reported in the manual of Hamilton Depression Inventory (Reynolds and Kobak, 1995).

**Part E. Relationship between IAS dimensions with multiphasic hostility and its sub variables**

**Table 5.1.5**

**Correlation between personality dimensions and multiphasic hostility**

	Self criticism	Guilt	cynicism	Acting out	Criticizing others	Projection hostility	Over all multiphasic hostility
Inertia	.12*	.08	.19***	.11*	.26***	.15***	.22***
Activation	-.13*	-.00	.06	-.06	.00	-.08	-.02
Stability	-.04	-.08	-.26***	-.07	-.26***	-.10	-.22***

\*\*\* Significant at 0.001 level;

\* Significant at 0.05 level.

The relationship between IAS personality dimensions and overall multiphasic hostility and its subvariables were studied by calculating correlations. 10 correlations were found significantly out of the total 21. Among the 10, seven are significant at 0.001 level and three are significant at 0.05 level. The high correlation is observed in three cases that is between inertia and criticizing others, which is positively correlated and stability with cynicism and criticizing others which is highly negatively correlated.

From the table 5.1.5, it is observed that activation and stability are negatively correlated with hostility and its sub variables, where as inertia is positively correlated. Activation is significantly and negatively correlated with self criticism only, which realizes that when activation increases self criticism decreases. All the other sub variables are also negatively correlated but which are not significant at any level.

Stability is significantly and negatively correlated with cynicism, criticizing others and in over all multiphasic hostility. The rest of the sub

variables are also negatively correlated but are not significant at any level. It indicates that when stability increases the overall hostility is decreasing. As the IAS theory explains, high stability people will be controlled, restful, balanced, mature, open, warm, self sufficient, relaxed, loving, unselfish, altruistic and democratic etc.

Inertia is positively correlated with over all multiphasic hostility and its all sub variables. Self-criticism, cynicism, acting out, criticizing others, projection hostility and over all hostility are significantly correlated but guilt is not significant at any level. It reveals that when inertia increases hostility also increases. Those who are in high inertia is characterized as lethargy, laziness, fear and inhibition, anxiety, shallowness of emotions, low initiative, low self-confidence, low self respect etc. by the IAS rating scale. Among the present sample these characteristics are positively related with hostility. Hence it is concluded that inertia is more closely related with hostility.

**Part F. Relationship between IAS dimensions with occupational stress and its sub variables**

**Table 5.1.6**

**Correlation between personality dimensions and overall occupational stress and its variables**

	QTOL	OLOL	RA	RC	LP	LA	GP	LC	LCl	IR	Ry	Pn	Js	An	SAJC	Over all O.S
Inertia	.44***	.22***	.36***	.42***	.32***	.28***	.26***	.45***	.13*	.48***	.02	.34***	.34***	.32***	.52***	.64***
Activation	-.28***	-.14*	-.17***	-.23***	-.13*	-.07	0.24***	-.18*	-.13*	-.21***	-.03	-.10	-.12*	-.15***	-.32***	-.23***
Stability	-.26***	-.14***	-.27***	-.29***	-.25***	-.25***	-.10	-.39***	-.03	0.35***	-.04	-.29***	-.28***	-.24***	-.32***	-.51***

\*\*\* Significant at 0.001 level; \* significant at 0.05 level.

- |        |                        |              |   |                                      |
|--------|------------------------|--------------|---|--------------------------------------|
| QTOL = | Quantitative over load | IR           | = | Interpersonal relations              |
| QLOL = | Qualitative over load  | Ry           | = | Responsibility                       |
| RA =   | Role ambiguity         | Pn           | = | Promotion                            |
| RC =   | Role conflict          | Js           | = | Job Security                         |
| LP =   | Lack of participation  | An           | = | Alienations                          |
| LA =   | Lack of autonomy       | SPWC         | = | Strenuous physical working condition |
| GP =   | Group pressure         | Over all O.S | = | Over all occupational stress.        |
| LC =   | Lack of challenges     |              |   |                                      |
| Lcl =  | Lack of control        |              |   |                                      |

The personality dimensions inertia, activation, stability with occupational stress and its sub variables were also subjected to correlation analysis. From the table 5.1.6 it is observed that there are 41 significant correlations out of 48. Among these 35 are significant at 0.001 level and 6 are significant at 0.05 level. The highest correlation is found between inertia and over all occupational stress ( $r = .64$ ) and the least correlation is between activation and job security ( $r = -.12$ ).

Activation as well as stability are negatively correlated with all the sub variables and overall occupational stress. Activation is highly negatively correlated with quantitative overload, role ambiguity, role conflict, group pressure, interpersonal relations, alienation, strenuous physical working condition and over all occupational stress. Where as stability is highly negatively correlated with almost all the sub variables except group pressure and responsibility.

Those who are high in activation, is characterized by restless over activity, uncontrolled energy, high drive, inability to remain alone or silent, risk taking, adventurous, efficient in planning things for the future, assertive, aggressive, rebellions etc. are helping the activation dominated personality's to deal their occupational stress very effectively. And those who are dominant in stability are explained as having high degree of stress tolerance level and freedom from maladjustment tendencies along with high self-awareness, sensitivity, flexibility, control and democratic etc. are helping them to their effectiveness of managing occupational stress.

Almost all the sub variables and over all occupational stress are highly positively correlated with inertia. It indicates that, with present sample, those who are having high inertia tendency are experiencing more occupational stress. According to Mathew (1995) inertia is introverted instability or proneness to develop introverted type of maladjustment under stress and is

more prone to anxiety also. So it is concluded that characteristics of inertia is more contributing to occupational stress.

**Part G. Relationship between IAS dimensions with HDI-scores (depression)**

**Table 5.1.7**

**Correlation between personality dimensions and depression**

	HDI raw score	HDI-17 score	HDI-melancholia
Inertia	.77***	.80***	.82***
Activation	-.33***	-.34***	-.38***
Stability	-.57***	-.59***	-.58***

\*\*\* Significant at 0.001 level.

The correlation between inertia, activation, and stability with three depression scores are given in the table 5.1.7. Among the total 9 correlations all are highly significant at 0.001 level. The high correlation is found between inertia and Hamilton depression - melancholia ( $r = .82$ ) and lowest correlation is between activation and Hamilton depression - raw score.

The result show that activation and stability are completely, highly, negatively correlated with all depression scores, which means that when activation and stability increases, depression decreases. The characteristic traits of both activation and stability are not related with clinical depression. But they may experience a common depression as generally we all are facing sometimes in our day to day life.

Depression and inertia is highly positively correlated with each other. This indicate that characteristics like having external lows of control, low self confidence, no strong moral or definite values, intropunitive nature, lack of

emotional ties, inability to mix with others etc. will increase depression. The result is in line with the findings supported by the theory of Mathew (1995). Hence it is concluded that the related characteristics traits of inertia are suggested as the risk factors for clinical depression.

#### **Part H. Relationship between multiphasic hostility and its sub variables with occupational stress and its sub variables**

The results of correlation between hostility and occupational stress are given in the table 5.1.8. Out of 112 correlations 61 are significant at 0.001 level and 8 are significant at 0.05 level. And the high correlation is found in two cases that is in between projection hostility with role conflict and over all occupational stress ( $r = .45$ ) and the least correlation is between guilt and role conflict ( $r = -.11$ ).

**Table 5.1.8**

**Correlation between multiphasic hostility and its sub variables with occupational stress and its variables**

	QTOL	OLOL	RA	RC	LP	LA	GP	LC	LCI	IR	Ry	Pn	Js	An	SPWC	Over all O.S
SC	.14***	.13*	.27***	.31***	.03	.19***	.19***	.28***	.17***	.28***	-.15***	.28***	.07	.29***	.17***	.33***
G	-.04	.25***	.03	0.11*	-.01	-.03	.04	0.12*	.20***	.00	-.03	.04	.07	-.02	-.02	.01
Cys	.22***	.29***	.31***	.33***	.06	.12*	.17	.24***	.14*	.30***	-.16***	.30***	.22***	.31***	.22***	.39***
AO	.05	.04	.01	.06	.00	.01	.11*	.10	-.04	.08	-.02	.07	.08	.05	.06	.09
CO	.25***	.19***	.04	.09	-.05	-.10	.11*	.05	.03	.23***	.16***	.14*	.19***	.08	.05	.18***
Ph	.20***	.03	.26***	.45***	.16***	.16***	.26***	.40***	.16***	.40***	0.17***	.38***	.24***	.29***	.23***	.45***
Over all hostility	.23***	.22***	.27***	.36***	.07	.07	.22***	.26***	.20***	.32***	-.10	.32***	.23***	.31***	.20***	.39***

\*\*\* Significant at 0.01 level; \* Significant at 0.05 level.

Self criticism is highly positively correlated with almost all the sub variables and over all occupational stress except responsibility, lack of participation and job security. Here responsibility is negatively correlated and other two are not significant statistically. Guilt is highly, positively correlated only with qualitative overload and lack of control and negatively correlated with role conflict and lack of challenges. In the case of cynicism, lack of participation and group pressure are not significant, but all the others are highly positively related. Where as acting out is significantly related with group pressure only. As in the case of criticizing others, it is almost highly positively related with quantitative and qualitative overload, group pressure, interpersonal relations, responsibility, promotion, job security and over all occupational stress.

Projective hostility is highly, positively correlated with almost all the variables except qualitative overload. Similarly over all multiphasic hostility is correlated with 13 variables. The rest of the three variables are lack of participations, lack of autonomy and responsibility are related but not significantly. It reveals that, occupational stress and its sub variables are more or less related with hostility.

The results are in line with the findings of Smith *et al.* (1988), Singh and Singh (1992) Rhodes *et al.* (2002) etc. are found that stress as such generally and specifically occupational stress has the relation with hostility.

Projection hostility is highly, positively correlated with almost all the variables except qualitative overload. Similarly over all multiphasic hostility is correlated with 13 variables. The rest of the three variables are lack of participation, lack of autonomy and responsibility are related but not significantly. It reveals that, occupational stress and its sub variables are more or less related with hostility.

**Part I. Relationship between multiphasic hostility and its sub variables with HDI -scores (depression)**

**Table 5.1.9. Correlation between hostility and depression**

	Self criticism	Guilt	Cynicism	Acting out	Criticizing others	Projective hostility	Over all hostility
HDI-raw score	.18***	.01	.25***	.06	.20***	.28***	.25***
HDI-17	.17***	.02	.22***	.09	.21***	.27***	.24***
HDI-melancholia	.20***	.04	.23***	.07	.19***	.31***	.26***

\*\*\* Significant at 0.001 level.

Table 5.1.9 gives the result of correlation between hostility and depression. The 15 are highly, significantly correlated out of the total 21. The high correlation is found between projection hostility and depression - melancholia ( $r=.31$ ) and the least correlation is between self-criticism and depression-17 ( $r=.17$ ).

The results indicate that guilt and depression is related but which is not significant at any level. Self criticism, cynicism, criticizing others, projection hostility and over all hostility are highly positively correlated with depression. It reveals that when these are increasing depression also increasing. Acting out is also related positively but not significant.

The results are supported with the findings of pioneer researches in the field. Freud (1917) emphasized the role of aggression on depression in his book "*Mourning and Melancholia*". Aggression and hostility are integral feature of every depression in the sense that an aggressive cathexes of the self-image is the metapsychological counterpart of the low self-esteem that is characteristic of depression. Beck (1967) suggest that an individual's feeling of unhappy, loneliness, inadequacy, hostility, aggression etc. are influencing

for deepening one's depression. Draghi and Flach (1975) found that hostility is the secondary characteristic symptom of depression.

It is also supported with the studies by Both-kewely and Friedman (1987), Heller (1993) Demarce and Harrison (1997) Lovallo (1997) Harrison and Rhodes (2000) Ewalds-Kvist *et al.* (2005) etc. are found that hostility is one of the characteristic symptom of depression. So it is concluded that hostility and depression is highly related.

**Part J. Relationship between occupational stress and its sub variables with HDI -scores (depression)**

**Table 5.1.10**  
**Correlation between occupational stress and its sub variables with depression**

	QTOL	OLOL	RA	RC	LP	LA	GP	LC	LCI	IR	Ry	Pn	Js	An	SPWC	Over all O.S
HDI raw score	.42***	.19***	.39***	.44***	.36***	.33***	.38***	.44***	.14*	.51***	-.02	.45***	.35***	.48***	.55***	.68***
HDI-17	.43***	.21***	.37***	.52***	.32***	.27***	.41***	.48***	.09	.53***	-.01	.46***	.41***	.45***	.57***	.68***
HDI- melanholia	.46***	.21***	.43***	.55***	.39***	.31***	.40***	.49***	.17***	.55***	-.01	.44***	.41***	.47***	.57***	.71***

\*\*\*Significant at 0.001 level, \* Significant at 0.05 level.

Occupational stress and its sub variables are correlated with three types of depression scores (see table 5.1.10). From the result, it is observed that, there are 44 significant correlations out of 48. Among them 43 are significant at 0.001 level and there is only one correlation is significant at 0.05 level. The highest correlation is between occupational stress and Hamilton depression - melancholia ( $r=.71$ ) and the least correlation is between lack of control and Hamilton depression - raw score. But responsibility is negatively correlated with depression and which is not significant.

Hamilton depression - raw score is interpreted as the symptomatology of clinical depression. Hamilton depression-17 is the clinical criterion for clinical depression and which helps to reduce false diagnosis where as melancholia is determining the severity of depression. All the correlations obtained highly positively correlated with all the three types of depression score, which means when occupational stress is increasing, depression also increasing. Almost all the sub variables and over all occupational stress are contributing for clinical depression.

The result is supported by the studies conducted by Weiss (1980), Pearlin (1989) Mirowsky and Ross (1989) Srivastava (1991), Mishra (1995), Kessler (1997), Varhol (2000), Agrawal (2001) Jacob (2003) etc. had found that vascular fatigue and physical pain due to work over load, tension, anxiety, stress, job stress etc. are positively correlated with depression. And occupational stress can be predisposing, precipitating or perpetuating cause for depression. And many other studies are suggested that occupational stress is negatively affecting the mental health of the working class people.

In the case of the present sample, there is significant relation between over all occupational stress and depression. It reveals that depression is become more popular among the workplace. Brown and Barris (1978) found depression to be almost three times more common in working class women. And the present study provides supporting evidence to the findings of the above mentioned researchers.

SECTION II

*Predictors of Occupational Stress*

This part of the analysis has been done with a view of finding out the predictor variables which may best predict occupational stress, HDI-raw score, HDI-17 score and HDI-melancholia. The technique followed for there is stepwise regression analysis (by ANOVA approach) for which computation was done with the help of a statistical package (SPSS).

According to Cohen and Maman, finding out the relative efficiency of a set of variables in predicting the criterion variable is significant only in cases where the indices of correlation between a set of the predictor variables and criterion variable exceeds 0.40. That is when the relationships are marked or substantial.

The stepwise regression analysis has been done not only to select the set of variables that best predict the criterion variables, but also to eliminate superfluous predictor variables.

The predictor variables used for step-wise regression analysis (ANOVA approach) are given below:

**Predictor variables**

1. Inertia
2. Activation
3. Stability
4. Self criticism
5. Guilt

6. Cynicism
7. Acting out
8. Criticizing others
9. Projection hostility

The co-efficient of correlation between the criterion variable and predictor variables are given separately in table 5.2.1. The indices of correlation reported are indicates that the predictor variable, inertia has the highest correlation with the criterion variable and hence it was selected to enter first in the analysis. The results of the step 1 analysis are given table 5.2.2.

**Table 5.2.1**

**Correlation coefficient between criterion variable and predictor variables**

Sl. No.	Predictor Variables	r
1	Inertia	.64***
2	Activation	-.23***
3	Stability	-.51***
4	Self-criticism	.33***
5	Guilt	.01
6	Cynicism	.39***
7	Acting out	.09
8	Criticizing others	.18***
9	Projection hostility	.45***

\*\*\* Significant at .001 level.

## Step I

The value F shows (table 5.2.2) that the variable inertia is highly significant in predicting the criterion variable occupational stress as the value of F is greater than the table value of F with 1/336-df.

The coefficient of correlation obtained for the variable inertia is 0.64 and in the shared variance ( $R^2 \times 100$ ) is 40.47. This shows that the percentage of variance of the criterion variable attributed by inertia is approximately 40 (Approximately 40% of variance in occupational stress is associated by the variable inertia).

**Table 5.2.2**

### Results of step-1 regression analysis

Variable entered	= $X_1$ inertia			
Correlation	= 0.64			
Percentage of variation ( $R^2 \times 100$ )	= 40.47			
Beta $\beta$	= 0.64		B = 1.25 SE $\beta$ = 0.08	
Constant	= 151.05			
Source	DF	S.S	M.S.S	F
Total	337			
Regression	1	130362.35	130362.35	228.43
Residual	336	191748.99	570.68	(P < 0.001)

## Step II

Step II analysis was taken up to see whether there is any increment in the percentage variation accounted for by the predictor variables. The predictor variable having second highest partial correlation with criterion variable is projection hostility.

The results of the analysis (table 5.2.3) reveal that the percentage of variance accounted for by inertia and projection hostility is 52.97%. This further suggests that by adding  $X_9$  to  $X_1$ ,  $R$  has changed from 0.64 to 0.73 and hence the percentage variation revised from 40.47 to 52.99. The increment in percentage variation there belong only 11.49%.

Here  $F = 188.65$  ( $P < 0.001$ ) for 2/335 - df

It suggests that the regression  $X_9$  is significant in predicting occupational stress, since the calculated F-value exceeds the tabled F-value at 2/335 - df. The 'B' weight of this variable  $X_1$  and  $X_9$  are 1.14 and 2.63 and the standard errors for  $B_1$  and  $B_9$  are 0.74 and 0.28 respectively.

**Table 5.2.3**

**Results of step-II regression analysis**

Variable entered	= $X_1$ and $X_9$ (inertia and projection hostility)			
Multiple correlation (R)	= 0.73			
Percentage of variation ( $R^2 \times 100$ )	= 52.97			
Beta <sub>1</sub> ( $\beta_1$ )	= 0.58	B = 1.14	SE $\beta_1$ = 0.74	
Beta 9 ( $\beta_9$ )	= 0.36	$B_9 = 2.63$	SE $\beta_9 = 0.28$	
Constant	= 109.35			
Source	DF	S.S	M.S.S	F
Total	337			
Regression	2	170620.08	85310.04	188.65 ( $P < 0.001$ )
Residual	335	151491.26	452.21	

### Step III

Similarly step III analysis was done to know the contribution of predictor variables. The predictor variable cynicism has the third highest correlation with criterion variable. Results from the table 5.2.4 indicate that the percentage of variance for inertia, projection hostility and cynicism is found to be 55.60. Further it is suggests that by adding  $X_6$  to  $X_9$  and  $X_1$ , R has changed from 0.73 to 0.75 and the percentage of variation also revised from 52.97 to 55.60. Thus the increment in percentage variation is 2.64.

Here  $F = 139.40$  ( $P < 0.001$ ) for 3/334 - df

It reveals that the regression  $X_6$  is significant is predicting occupational stress. The 'B' weight of this variable  $X_1$ ,  $X_9$  and  $X_6$  are respectively 1.09; 2.21 and 1.03; and the standard errors are  $B_1$ ,  $B_9$  and  $B_6$  are 0.07; 0.29; and 0.23 respectively.

**Table 5.2.4**

**Results of step-III regression analysis**

Variable entered	= $X_1$ , and $X_9$ , and $X_6$ (Inertia, projection hostility and cynicism)			
Multiple correlation (R)	= 0.75			
Percentage of variation ( $R^2 \times 100$ )	= 55.60			
Beta1 ( $\beta_1$ )	= 0.56	$B_1 = 1.09$	$SE\beta_1 = 0.07$	
Beta 9 ( $\beta_9$ )	= 0.30	$B_9 = 2.21$	$SE\beta_9 = 0.29$	
Beta 6 ( $\beta_6$ )	= 0.18	$B_6 = 1.03$	$SE\beta_6 = 0.23$	
Constant	= 99.40			
Source	DF	S.S	M.S.S	F
Total	337			
Regression	3	179084.69	59694.90	139.40
Residual	334	143026.65	428.22	( $P < 0.001$ )

#### Step IV

The predictor variable criticizing others has the fourth highest correlation with criterion variable occupational stress. Table 5.2.5 show the results of step IV regression analysis. The percentage of variance accounted for cynicism is 55.60 and criticizing others is 56.13. By adding  $X_8$  to  $X_6$ ;  $X_9$  and  $X_1$ ,  $R$  is observed as constant that is 0.75 but there is a slight change in percentage of variation that is from 55.60 to 56.13 and there is an increase of 0.53%.

Here  $F = 106.51$  ( $P < 0.001$ ) for 4/333 - df.

It also suggests that the regression  $X_8$  is significant in predicting occupational stress. The 'B' weight of this variable  $X_1$ ,  $X_9$ ,  $X_6$  and  $X_8$  are 1.12; 2.16; 1.24 and 0.63 respectively. And the standard errors are  $B_1 = 0.07$ ;  $B_9 = 0.29$ ; and  $B_6 = 0.25$  and  $B_8 = 0.31$ .

**Table 5.2.5**  
**Results of step-IV regression analysis**

Variable entered	= $X_{1.}$ , $X_{9.}$ , $X_6$ and $X_8$ (inertia, projection hostility, cynicism and criticizing others)			
Multiple correlation (R)	= 0.75			
Percentage of variation ( $R^2 \times 100$ )	= 56.13			
Beta ( $\beta_1$ )	= 0.57	B1 = 1.12	SE $\beta_1$ = 0.07	
Beta 9 ( $\beta_9$ )	= 0.29	B <sub>9</sub> = 2.16	SE $\beta_9$ = 0.29	
Beta 6 ( $\beta_6$ )	= 0.21	B6 = 1.24	SE $\beta_6$ = 0.25	
Beta 8 ( $\beta_8$ )	= 0.08	B <sub>8</sub> = 0.63	SE $\beta_8$ = 0.31	
Constant	= 108.72			
Source	DF	S.S	M.S.S	F
Total	337			
Regression	4	180796.33	45199.08	106.51 (P < 0.001)
Residual	333	141315.01	424.37	

**Table 5.2.6**  
**Details regarding increase in Percentage Variation**

Step	Variable entered	R	Increase in R	Percentage variation	Increase in percentage variation
I	Inertia	.64		40.47	
II	Projection hostility	.73	.09	52.96	11.49
III	Cynicism	.74	.01	55.60	2.64
IV	Criticizing others	.75	.01	56.13	0.53

## Comments

Stepwise regression analysis shows that there are four significant predictor variables to predict the criterion variable occupational stress.

According to Mathew (1995) inertia is introverted instability or proneness to develop introverted type of maladjustment under stress. The main characteristic features of inertia are lethargy, laziness, fear, inhibition, anxiety, shallowness of emotions, low self-confidence etc. In short, they are more prone to have stress.

Researchers like Biji and Jayan (2005) found that the neuroticism type of personalities are experiencing too much of stress. This finding also support the results since inertia is considered as neuroticism type of personality.

Siegrist, *et al.* (1990) found that competitiveness, work related over commitment and hostility is associated with greater risk for stress and ill-health. Another study by Singh and Singh (1992) suggests that managers who are experienced high organizational role stress reported more environmental frustration, anger reactions, latent hostility and job anxiety.

SECTION III

*Predictors of Depression*

## **Part A. Predictors of HDI-raw score (Depression symptomatology)**

The predictor variables used for step-wise regression analysis by ANOVA approach are given below.

### **Predictor variables**

1. Inertia
2. Activation
3. Stability
4. Self criticism
5. Guilt
6. Cynicism
7. Acting out
8. Criticizing others
9. Projection hostility
10. Quantitative overload
11. Qualitative overload
12. Role ambiguity
13. Role conflict

14. Lack of participation
15. Lack of autonomy
16. Group pressure
17. Lack of challenges
18. Lack of control
19. Interpersonal relations
20. Responsibility
21. Promotion
22. Job security
23. Alienation
24. Strenuous physical working conditions.

**Table 5.3.1**

**Correlation coefficient between criterion variable and predictor variables**

Sl. No.	Predictor Variables	r
1.	Inertia	.77***
2.	Activation	-.33***
3.	Stability	-.57***
4.	Self criticism	.18***
5.	Guilt	.01
6.	Cynicism	.25***
7.	Acting out	.06
8.	Criticizing others	.20***
9.	Projection hostility	.28***
10.	Quantitative overload	.42***
11.	Qualitative overload	.19***
12.	Role ambiguity	.39***
13.	Role conflict	.49***
14.	Lack of participation	.36***
15.	Lack of autonomy	.33***
16.	Group pressure	.38***
17.	Lack of challenges	.44***
18.	Lack of control	.14*
19.	Interpersonal relations	.51***
20.	Responsibility	-.02
21.	Promotion	.45***
22.	Job security	.35***
23.	Alienation	.48***
24.	Strenuous physical working condition	.55***

\*\*\* Significance at 0.001 level

\* Significance at 0.05 level.

Table 5.3.1 show the coefficient of correlation between criterion variable, HDI-raw score and the predictor variables. The values reported in the table indicates that the highest correlation is for inertia, so it comes first in the analysis and it is followed with the other variables.

### Step I

The co-efficient of correlation (table 5.3.2) obtained for the variable inertia is 0.77 and its percentage of variation ( $R^2 \times 100$ ) of the criterion variable is found to be 59.75. It is approximately 60% of the variance in HDI-raw score (depressive symptomatology) is associated by the variable inertia.

The F value shows that the variable inertia is highly significant in predicting the criterion variable, as the value of F is greater than the tabled value of F with 1/336-df.

The successive part of the analysis was looking for, to check whether any contribution and variation in percentage accounted for by the predictor variables.

**Table 5.3.2**  
**Results of step-1 regression analysis**

Variable entered	= $X_1$ inertia			
Correlation	= 0.77			
Percentage of variation ( $R^2 \times 100$ )	= 59.75			
Beta $\beta$	= 0.77	$B_1 = 0.22$	$SE\beta = 0.01$	
Constant	= 9.26			
Source	DF	S.S	M.S.S	F
Total	337			
Regression	1	4154.49	4154.49	499.56
Residual	336	2794.29	8.32	( $P < 0.001$ )

**Table 5.3.3**  
**Results of step-II regression analysis**

Variable entered = $X_1$ and $X_{23}$ (Inertia and alienation)				
Multiple correlation (R) = 0.81				
Percentage of variation ( $R^2 \times 100$ ) = 65.85				
Beta 1 ( $\beta_1$ ) = 0.69 $B_1 = 0.20$ $SE\beta_1 = 0.01$				
Beta 23( $\beta_{23}$ ) = 0.26 $B_{23} = 2.63$ $SE\beta_{23} = 0.05$				
Constant = 6.37				
Source	DF	S.S	M.S.S	F
Total	337			
Regression	2	4575.56	2287.78	322.94
Residual	335	2373.22	7.08	(P<0.001)

### Step II

The predictor variable alienation is having second highest partial correlation with criterion variable. The results from the table 5.3.3 indicate that by adding  $X_{23}$  to  $X_1$ , R has changed from 0.77 to 0.81 and the percentage of variation is 59.75% to 65.85%. Hence the percentage of variation shows the increment in 6.1%.

Here  $F = 322.94$  ( $P < 0.001$ ) for 2/335 - df.

It reveals that the regression  $X_{23}$  is significant in predicting HDI - raw score (depressive symptomatology) because the F-value is found to be significant at 0.001 level. The 'B' weight of this variable  $X_1$  and  $X_{23}$  are 0.20 and 0.40 and the standard errors are 0.01 and 0.05 respectively.

**Table 5.3.4**  
**Results of step-III regression analysis**

Variable entered	= $X_1$ ; $X_{23}$ and $X_{16}$ (Inertia, alienation and group pressure)			
Multiple correlation (R)	= 0.82			
Percentage of variation ( $R^2 \times 100$ )	= 67.51			
Beta1 ( $\beta_1$ )	= 0.66	$B_1 = 0.19$	$SE\beta_1 = 0.01$	
Beta 23 ( $\beta_{23}$ )	= 0.22	$B_{23} = 0.35$	$SE\beta_{23} = 0.05$	
Beta 16 ( $\beta_{16}$ )	= 0.14	$B_{16} = 0.19$	$SE\beta_{16} = 0.04$	
Constant	= 5.31			
Source	DF	S.S	M.S.S	F
Total	337			
Regression	3	4690.91	1563.64	231.30
Residual	334	2257.87	6.76	( $P < 0.001$ )

### Step III

The third highest correlation (table 5.3.4) with the predictor variable is group pressure ( $X_{16}$ ). Multiple correlation is changed from alienation to group pressure is 0.81 to 0.82 and the percentage of variation is 65.85 to 67.51 respectively. Thus an increment in the percentage variation is found to be 1.66%.

Here  $F = 231.30$  ( $P < 0.001$ ) for 3/334 - df.

The F-value is found to be highly significant. So it realizes that the regression  $X_{16}$  has the role for predicting the criterion variable. Here 'B' weights of the above three predictor variables are 0.19; 0.35 and 0.19 and standard errors are 0.01; 0.05 and 0.04 respectively.

## Step IV

Table 5.3.5 show the result of the step IV regression analysis. It is observed that the fourth highest correlation is for the predictor variable, lack of autonomy. By adding all the significant predictor variables R is calculated as 0.83 and there is variation is percentage from 67.51 to 68.78. And which is reported an increase in the percentage of 1.27.

The F-value 183.37 is found to be highly significant at 0.001 level for 4/333 - df. It suggests that the regression  $X_{15}$  is significant in predicting the criterion variable HDI - raw score (depressive symptomatology). The 'B' weight of  $X_1 = 0.18$ ;  $X_{23} = 0.33$ ;  $X_{16} = 0.19$  and  $X_{15} = 0.14$  and the standard errors are 0.01, 0.05; 0.04 and 0.03 respectively.

**Table 5.3.5**  
**Results of step-IV regression analysis**

Variable entered	= $X_1$ , $X_{23}$ , $X_{16}$ and $X_{15}$ (Inertia, alienation, group pressure and lack of autonomy)			
Multiple correlation (R)	= 0.83			
Percentage of variation ( $R^2 \times 100$ )	= 68.78			
Beta 1 ( $\beta_1$ )	= 0.63	$B_1 = 10.18$	$SE\beta_1 = 0.01$	
Beta 23 ( $\beta_{23}$ )	= 0.22	$B_{23} = 0.33$	$SE\beta_{23} = 0.05$	
Beta 16 ( $\beta_6$ )	= 0.15	$B_{16} = 0.19$	$SE\beta_{16} = 0.04$	
Beta 15 ( $\beta_{15}$ )	= 0.12	$B_{15} = 0.14$	$SE\beta_{15} = 0.03$	
Constant	= 2.74			
Source	DF	S.S	M.S.S	F
Total	337			
Regression	4	4779.09	1194.77	183.37
Residual	333	2169.69	6.52	( $P < 0.001$ )

**Table 5.3.6**  
**Results of step-V regression analysis**

Variable entered	= $X_1; X_{23}; X_{16}; X_{15}$ and $X_{21}$ (Inertia, alienation, group pressure and lack of autonomy)			
Multiple correlation (R)	= 0.83			
Percentage of variation ( $R^2 \times 100$ )	= 69.24			
Beta 1 ( $\beta_1$ )	= 0.62	B1 = 0.18	SE $\beta_1$ = 0.01	
Beta 23 ( $\beta_{23}$ )	= 0.19	B <sub>23</sub> = 0.30	SE $\beta_{23}$ = 0.05	
Beta 16 ( $\beta_{16}$ )	= 0.12	B <sub>16</sub> = 0.17	SE $\beta_{16}$ = 0.04	
Beta 15 ( $\beta_{15}$ )	= 0.10	B <sub>15</sub> = 0.12	SE $\beta_{15}$ = 0.04	
Beta 21 ( $\beta_{21}$ )	= 0.08	B <sub>21</sub> = 0.12	SE $\beta_{21}$ = 0.05	
Constant	= 2.62			
Source	DF	S.S	M.S.S	F
Total	337			
Regression	5	4811.61	962.32	149.49 (P<0.001)
Residual	332	2137.17	6.44	

### Step V

Similarly the fifth highest correlation for the predictor variable is promotion. From the result (table 5.3.6) it is seen that, the multiple correlation obtained for promotion is calculated as same ( $R=0.83$ ). But the percentage of variation is changed from 68.78 to 69.24; it gives an increment of 0.46 percentages only.

The regression  $X_{21}$  is significant in predicting the criterion variable as the calculated F-value is found to be highly significant.

Here  $F = 149.49$  ( $P < 0.001$ ) for 5/332 - df.

The 'B' weight of above all significant predictor variables are 0.18; 0.30; 0.17; 0.12 and 0.12 and standard errors are 0.01; 0.05; 0.04; 0.04 and 0.05 respectively.

**Table 5.3.7**  
**Details regarding increase in percentage variation**

Step	Variable entered	R	Increase in R	Percentage variation	Increase in percentage variation
I	Inertia	.77		59.75	
II	Alienation	.81	.04	65.85	6.1
III	Group pressure	.82	.01	67.51	1.66
IV	Lack of autonomy	.83	.01	68.78	1.27
V	Promotion	.83	.00	69.24	0.46

### **Comments**

Step I to step V regression analysis reveals that there are five highly significant predictor variables to contribute to affect the criterion variable HDI-raw score that is depressive symptomatology.

The HDI - raw score provides valuable clinical information on current levels of depressive symptomatology and not to provide a diagnosis of a specific and definitive depression disorder (Reynolds and Kobak, 1995). As the results indicate that the above all mentioned significant predictor variables are highly contributing for developing symptoms of depression. The people who have more character traits of inertia are more prone to develop depression (Mathew, 1995).

Alienation, group pressure, lack of autonomy and promotion are significantly contributing for the development of depressive symptomatology in this sample. The researcher has interviewed many nurses in both public and private sector. According to them emotional burnout, psychological dissatisfaction and lack of freedom are very common among them. But they

are coming and doing their duty just for the job sake. In private sector nurses are not having much promotional opportunities where as in government sector promotional opportunities are restricted.

From the review of literature many researchers reported that stress and hostility are more closely related with depression whereas in the case of occupational stress, it is not reported that any specific dimension of occupational stress is affecting depression but altogether it is contributing.

### **Part B. Predictors of HDI - 17 score (Clinical depression)**

The predictor variables used for stepwise regression analysis by ANOVA approach are given below.

#### **Predictor variables**

1. Inertia
2. Activation
3. Stability
4. Self criticism
5. Guilt
6. Cynicism
7. Acting out
8. Criticizing others
9. Projection hostility
10. Quantitative overload
11. Qualitative overload

12. Role ambiguity
13. Role conflict
14. Lack of participation
15. Lack of autonomy
16. Group pressure
17. Lack of challenges
18. Lack of control
19. Interpersonal relations
20. Responsibility
21. Promotion
22. Job security
23. Alienation
24. Strenuous physical working conditions.

**Table 5.3.8**  
**Correlation coefficient between criterion variable and predictor variables**

Sl. No.	Predictor variables	r
1.	Inertia	.80***
2.	Activation	-.34***
3.	Stability	-.59***
4.	Self criticism	.17***
5.	Guilt	.02
6.	Cynicism	.22***
7.	Acting out	.09
8.	Criticizing others	.21***
9.	Projection hostility	.27***
10.	Quantitative overload	.43***
11.	Qualitative overload	.21***
12.	Role ambiguity	.37***
13.	Role conflict	.52***
14.	Lack of participation	.32***
15.	Lack of autonomy	.27***
16.	Group pressure	.41***
17.	Lack of challenges	.48***
18.	Lack of control	.09
19.	Interpersonal relations	.53***
20.	Responsibility	.01
21.	Promotion	.46***
22.	Job security	.41***
23.	Alienation	.45***
24.	Strenuous physical working condition	.57***

\*\*\* Significance at 0.001 level

The values of correlation coefficient between the criterion variables and predictor variables are shown in the table 5.3.8. The results indicated that majority of predictor variables are significantly related with the criterion variable. The variable inertia was selected to enter first in the analysis because it has highest correlation with the criterion variable.

Here the criterion variable is HDI-17 score, which is the discriminant for clinically diagnosed depression. This part of the analysis also taken up for to see what the predictor variables are significantly contributing for clinical depression. And it is followed with stepwise regression analysis.

### **Step I**

Table 5.3.9 show the results of the step I regression analysis. The coefficient of correlation for the variable inertia is 0.80 and the percentage of variation is found to be 63.72. It suggests that approximately 64% of the variance in HDI-17 score (clinical depression) is contributed by the variable inertia.

The F-value is highly significant at 0.001 level with 1/336 - df. It means that  $X_1$  regression has the highest significant role in predicting the criterion variable. The 'B' weight and standard error of the variable are 0.24 and 0.01 respectively.

**Table 5.3.9**  
**Results of step-1 regression analysis**

Variable entered	= $X_1$ inertia			
Correlation	= 0.80			
Percentage of variation ( $R^2 \times 100$ )	= 63.72			
Beta 1 ( $\beta_1$ )	= 0.80	$B_1 = 0.24$	$SE\beta = 0.01$	
Constant	= 5.66			
Source	DF	S.S	M.S.S	F
Total	337			
Regression	1	4637.74	4637.74	590.18 ( $P < 0.001$ )
Residual	336	2640.36	7.86	

### Step II

The second highest partial correlation with the predictor variable is alienation. From the table 5.3.10, results indicate that R has changed from 0.80 to 0.82 by adding  $X_{23}$  to  $X_1$ . And the percentage variation is from 63.72 to 67.96. So the increment in percentage variation is calculated as 4.24%.

$X_{23}$  regression is significant in predicting the criterion variable because the F-value is highly significant at 0.001 level with 2/335 - df. The 'B' weight and standard errors are as follows  $B_1 = 0.21$  and  $B_{23} = 0.34$  and  $S_E \beta_1 = 0.01$  and  $S_E \beta_{23} = 0.05$  respectively.

**Table 5.3.10**

**Results of step-II regression analysis**

Variable entered	= $X_1$ and $X_{23}$ (Inertia and Alienation)			
Multiple correlation (R)	= 0.82			
Percentage of variation ( $R^2 \times 100$ )	= 67.96			
Beta 1 ( $\beta_1$ )	= 0.73	$B_1 = 0.21$	$SE\beta_1 = 0.01$	
Beta 23( $\beta_{23}$ )	= 0.22	$B_{23} = 2.34$	$SE\beta_{23} = 0.05$	
Constant	= 3.18			
Source	DF	S.S	M.S.S	F
Total	337			
Regression	2	4946.26	2473.13	355.30 ( $P < 0.001$ )
Residual	335	2331.84	6.96	

**Step III**

The predictor variable, group pressure has the third highest partial correlation with the criterion variable. Table 5.3.11 shows the results of  $X_{16}$  regression and the calculated F-value is found to be significant at 0.001 level with 3/334 - df. The multiple R and the percentage of variation is revised from 0.82 to 0.84 and 67.96 and 70.53. Thus it is observed that, there is an increment in the percentage of variation is found to be 2.57. It reveals that group pressure has the significant role to predict the criterion variable. The 'B' weight and the standard errors of the respective variables are given also in the table.

**Table 5.3.11**  
**Results of step-III regression analysis**

Variable entered	= $X_1$ ; $X_{23}$ and $X_{16}$ (Inertia, alienation and group pressure)			
Multiple correlation (R)	= 0.84			
Percentage of variation ( $R^2 \times 100$ )	= 70.53			
Beta1 ( $\beta_1$ )	= 0.69	$B_1 = 0.24$	$SE\beta_1 = 0.01$	
Beta 23 ( $\beta_{23}$ )	= 0.18	$B_{23} = 0.28$	$SE\beta_{23} = 0.05$	
Beta 16 ( $\beta_{16}$ )	= 0.17	$B_{16} = 0.24$	$SE\beta_{16} = 0.04$	
Constant	= 1.84			
Source	DF	S.S	M.S.S	F
Total	337			
Regression	3	5132.88	1710.96	266.39 ( $P < 0.001$ )
Residual	334	2145.22	6.42	

**Step IV**

Table 5.3.12 shows the results of the step IV regression analysis. The fourth highest correlation is for the predictor variable strenuous physical working condition. By adding  $X_{24}$ ;  $X_{16}$ ;  $X_{23}$  and  $X_1$  R is calculated as 0.84 and the percentage of variation is observed as 70.53 to 71.55. It gives an increase in the percentage variation of 1.02.

Here  $F = 209.32$  ( $P < 0.001$ ) for 4/333 - df.

The F-value is found to be highly significant and therefore the predictor variable  $X_{24}$  is also significant for predicting the criterion variable, HDI-17 score (clinical depression). Then 'B' weight and standard errors of the related variables are given in the table.

**Table 5.3.12**

**Results of step-IV regression analysis**

Variable entered	= $X_{1.}, X_{23.}, X_{16}$ and $X_{24}$ (Inertia, alienation, group pressure and strenuous physical working condition)			
Multiple correlation (R)	= 0.84			
Percentage of variation ( $R^2 \times 100$ )	= 71.55			
Beta 1 ( $\beta_1$ )	= 0.64	$B_1 = 0.19$	$SE\beta_1 = 0.01$	
Beta 23 ( $\beta_{23}$ )	= 0.13	$B_{23} = 0.21$	$SE\beta_{23} = 0.05$	
Beta 16 ( $\beta_6$ )	= 0.17	$B_{16} = 0.23$	$SE\beta_{16} = 0.04$	
Beta 24 ( $\beta_{24}$ )	= 0.13	$B_{24} = 0.15$	$SE\beta_{24} = 0.04$	
Constant	= 1.19			
Source	DF	S.S	M.S.S	F
Total	337			
Regression	4	5207.16	1301.79	209.32 ( $P < 0.001$ )
Residual	333	2070.93	6.22	

**Step V**

Similarly the fifth highest correlation is found for the predictor variable promotion. Results from the table 5.3.13 reveal that, the multiple R obtained for the variable is 0.85 and the percentage of variation is from 71.55 to 72.18. It gives an increment in the percentage variation of 0.63.

Here  $F = 172.30$  ( $P < 0.001$ ) for 5/332 - df.

It realizes that the F-value obtained is highly significant. So that the regression analysis  $X_{21}$  has the role to predict the criterion variable.

**Table 5.3.13**  
**Results of the step-V regression analysis**

Variable entered	= $X_1$ ; $X_{23}$ ; $X_{16}$ ; $X_{15}$ and $X_{21}$ (Inertia, alienation, group pressure, strenuous physical working condition and promotion)			
Multiple correlation (R)	= 0.85			
Percentage of variation ( $R^2 \times 100$ )	= 72.18			
Beta 1 ( $\beta_1$ )	= 0.63	$B_1 = 0.19$	$SE\beta_1 = 0.01$	
Beta 23 ( $\beta_{23}$ )	= 0.11	$B_{23} = 0.18$	$SE\beta_{23} = 0.05$	
Beta 16 ( $\beta_{16}$ )	= 0.14	$B_{16} = 0.19$	$SE\beta_{16} = 0.04$	
Beta 24 ( $\beta_{24}$ )	= 0.11	$B_{15} = 0.13$	$SE\beta_{24} = 0.04$	
Beta 21 ( $\beta_{21}$ )	= 0.09	$B_{21} = 0.14$	$SE\beta_{21} = 0.05$	
Constant	= 2.72			
Source	DF	S.S	M.S.S	F
Total	337			
Regression	5	5253.55	10.50.71	172.30 ( $P < 0.001$ )
Residual	332	2024.54	6.09	

### Step VI

Even though, the predictor variable, guilt is not correlated significantly with the criterion variable, it become the predictor variable with the sixth highest correlation in regression analysis. It is the only one significant contributor among the sub variables of multiphasic hostility. From the results (table 5.3.14) it is observed that the calculated F-value is found to be highly significant at 0.001 level with the 6/331 - df.

The multiple R obtained for the variable is same as in the case of above said predictor variable that is 0.85 and the percentage of variation is from 72.18 to 72.81 and the increase of percentage variation is also same ie. 0.63.

**Table 5.3.14**  
**Results of the step -VI regression analysis**

Variable entered	= $X_1; X_{23}; X_{16}; X_{24}$ and $X_{21}$ and $X_5$ (Inertia, alienation, group pressure, strenuous physical working condition, promotion and guilt)			
Multiple correlation (R)	= 0.85			
Percentage of variation ( $R^2 \times 100$ )	= 72.81			
Beta 1 ( $\beta_1$ )	= 0.64	$B_1 = 0.19$	$SE\beta_1 = 0.01$	
Beta 23 ( $\beta_{23}$ )	= 0.11	$B_{23} = 0.17$	$SE\beta_{23} = 0.05$	
Beta 16 ( $\beta_{16}$ )	= 0.14	$B_{16} = 0.19$	$SE\beta_{16} = 0.04$	
Beta 24 ( $\beta_{24}$ )	= 0.10	$B_{15} = 0.13$	$SE\beta_{24} = 0.04$	
Beta 21 ( $\beta_{21}$ )	= 0.09	$B_{21} = 0.14$	$SE\beta_{21} = 0.05$	
Beta 5 ( $\beta_5$ )	= 0.07	$B_5 = 0.12$	$SE\beta_5 = 0.04$	
Constant	= 2.41			
Source	DF	S.S	M.S.S	F
Total	337			
Regression	6	5299.47	883.24	147.76 ( $P < 0.001$ )
Residual	331	1978.63	5.98	

### Step VII

After step VII analysis table 5.3.15, it is observed that the last and seventh highest correlation is with the predictor variable job security. The multiple correlation is seen as the same of the above two predictor variables ( $R=0.85$ ). The percentage variation is rised from 72.81 to 73.27 by adding all the significant predictors. And the increase in percentage variation is 0.46% only.

Her  $F = 129.22$  ( $P < 0.001$ ) 7/330 - df

The regression analysis for  $X_{22}$  has the significant role to predict the criterion variable because the F-value is found to be highly significant statistically.

**Table 5.3.15**

**Results of the step VII regression analysis**

Variable entered	= $X_1; X_{23}; X_{16}; X_{24}; X_{21}; X_5$ and $X_{22}$ (Inertia, alienation, group pressure, strenuous physical working condition and promotion, guilt and job security)			
Multiple correlation (R)	= 0.85			
Percentage of variation ( $R^2 \times 100$ )	= 73.27			
Beta 1 ( $\beta_1$ )	= 0.63	$B_1 = 0.19$	$SE\beta_1 = 0.01$	
Beta 23 ( $\beta_{23}$ )	= 0.11	$B_{23} = 0.17$	$SE\beta_{23} = 0.05$	
Beta 16 ( $\beta_{16}$ )	= 0.13	$B_{16} = 0.19$	$SE\beta_{16} = 0.04$	
Beta 24 ( $\beta_{24}$ )	= 0.09	$B_{15} = 0.13$	$SE\beta_{24} = 0.04$	
Beta 21 ( $\beta_{21}$ )	= 0.08	$B_{21} = 0.14$	$SE\beta_{21} = 0.05$	
Beta 5 ( $\beta_5$ )	= 0.09	$B_5 = 0.12$	$SE\beta_5 = 0.04$	
Beta 22 ( $\beta_{22}$ )	= 0.07	$B_{22} = 0.28$	$SE\beta_{22} = 0.11$	
Constant	= 2.44			
Source	DF	S.S	M.S.S	F
Total	337			
Regression	7	5332.65	761.81	129.22 ( $P < 0.001$ )
Residual	330	1945.45	5.89	

**Table 5.3.16**  
**Details regarding increase in the percentage variation**

Step	Variable entered	R	Increase in R	Percentage variation	Increase in percentage variation
I	Inertia	.80		63.72	
II	Alienation	.82	.02	67.96	4.24
III	Group pressure	.84	.02	70.53	2.57
IV	Strenuous physical working condition	.84	.00	71.55	1.02
V	Promotion	.85	.01	72.18	0.63
VI	Guilt	.85	.00	72.81	.63
VII	Job security	.85	.00	73.27	.46

### Comments

The results of stepwise regression analysis are reporting that, there are seven highly significant predictor variables for predicting the criterion variable HDI-17 score (Clinical depression).

Among the three dimensions of personality inertia has the major significant role to predict clinical depression. Mathew's theory is also supporting these findings.

The other notable finding is that guilt is also a significant predictor among the hostility sub variables. Guilt is a feeling and it acts as the experience of hostility. Jacobson (1971) found that feeling of guilt is one of the characteristic feature of depression. Mendelson (1967) reported that, guilt is one of the causal factors of neurotic depression.

The subvariable alienation, group pressure, strenuous physical working condition, promotion and job security of occupational stress are highly contributing for clinical depression. Mirowsky and Ross (1989) and Pearlin (1989) were concluded that chronic role related stresses are significantly associated with chronically depressed mood.

### **Part C. Predictors of HDI-melancholia (depression severity)**

The predictor variables used for stepwise regression analysis by ANOVA approach are given below:

#### **Predictor variables**

1. Inertia
2. Activation
3. Stability
4. Self criticism
5. Guilt
6. Cynicism
7. Acting out
8. Criticizing others
9. Projection hostility
10. Quantitative overload
11. Qualitative overload
12. Role ambiguity
13. Role conflict
14. Lack of participation

15. Lack of autonomy
16. Group pressure
17. Lack of challenges
18. Lack of control
19. Interpersonal relations
20. Responsibility
21. Promotion
22. Job security
23. Alienation
24. Strenuous physical working conditions.

**Table 5.3.17**  
**Correlation coefficient between criterion variable and predictor variables**

Sl. No.	Predictor Variables	r
1.	Inertia	.82***
2.	Activation	-.37***
3.	Stability	-.58***
4.	Self criticism	.20***
5.	Guilt	.00
6.	Cynicism	.23***
7.	Acting out	.07
8.	Criticizing others	.19***
9.	Projection hostility	.31***
10.	Quantitative overload	.46***
11.	Qualitative overload	.21***
12.	Role ambiguity	.43***
13.	Role conflict	.55***
14.	Lack of participation	.39***
15.	Lack of autonomy	.31***
16.	Group pressure	.39***
17.	Lack of challenges	.49***
18.	Lack of control	.17***
19.	Interpersonal relations	.55***
20.	Responsibility	-.01
21.	Promotion	.44***
22.	Job security	.41***
23.	Alienation	.47***
24.	Strenuous physical working condition	.57***

\*\*\* Significance at 0.001 level

The table 5.3.17 shows the coefficient of correlation between the criterion variable, HDI - melancholia and predictor variables. The indices of correlation reported are indicate that the predictor variable. Inertia has the

highest correlation with the criterion variable and which is highly significant at 0.001 level also. Hence it was selected to enter first in the step wise regression analysis and the results are given table 5.3.18.

Here the criterion variable HDI melancholia is the discriminate factor of diagnosing severe syndrome or subtype of depression. So the forwarded analysis was checking for understanding the contribution and percentage variation of the above predictor variables.

### **Step I**

The coefficient of correlation obtained (table 5.3.18) for the variable inertia is 0.82 and its percentage of variation is found to be 67.22. It reveals that, approximately 67% variance in HDI-melancholia (severity of depression) is associated by the variable inertia.

The F-value is highly significant at 0.001 level with 1/336 - df. It suggests that the variable inertia is a major significant role to predict the criterion variable.

**Table 5.3.18**  
**Results of step-1 regression analysis**

Variable entered	=	$X_1$ inertia		
Correlation	=	0.82		
Percentage of variation ( $R^2 \times 100$ )	=	67.22		
Beta 1 ( $\beta_1$ )	=	0.82	$B_1 = 0.25$	$SE\beta = 0.01$
Constant	=	2.39		
Source	DF	S.S	M.S.S	F
Total	337			
Regression	1	5167.32	5167.32	688.86 ( $P < 0.001$ )
Residual	336	2520.44	7.50	

### Step II

The second highest correlation is with the predictor variable role conflict. The results from the table 5.3.19 indicate that, by adding  $X_{13}$  to  $X_1$ , R has changed from 0.82 to 0.85 and the percentage of variation is 67.22 to 71.95. So the increment in the percentage variation is observed as 4.73%.

Here the calculated F-value is highly significant at 0.001 level with the 2/335 - df. And therefore the  $X_{13}$  regression is significant in predicting the criterion variable (HDI - melancholia).

**Table 5.3.19**  
**Results of step-II regression analysis**

Variable entered = $X_1$ and $X_{13}$ (Inertia and role conflict)				
Multiple correlation (R) = 0.85				
Percentage of variation ( $R^2 \times 100$ ) = 71.95				
Beta 1 ( $\beta_1$ ) = 0.72		$B_1 = 0.22$		$SE\beta_1 = 0.01$
Beta 23( $\beta_{23}$ ) = 0.24		$B_{23} = 0.25$		$SE\beta_{23} = 0.03$
Constant = 0.36				
Source	DF	S.S	M.S.S	F
Total	337			
Regression	2	5530.95	2765.48	429.54 ( $P < 0.001$ )
Residual	335	2156.81	6.44	

### Step III

The predictor variable alienation is having the third highest correlation with the criterion variable. Here the multiple correlations are changed from 0.85 to 0.86 and the percentage of variation is from 71.95 to 73.99 respectively (table 5.3.20). Thus it is noted that, an increment in the percentage variation is found to be 2.04%.

Here  $F = 316.77$  ( $P < 0.001$ ) for 3/334 - df.

The value is highly significant. So it is suggests that the regression  $X_{23}$  has the significant role to predict the criterion variable.

**Table 5.3.20**  
**Results of step-III regression analysis**

Variable entered	= $X_1$ ; $X_{13}$ and $X_{23}$ (Inertia, role conflict and alienation)			
Multiple correlation (R)	= 0.86			
Percentage of variation ( $R^2 \times 100$ )	= 73.99			
Beta1 ( $\beta_1$ )	= 0.69	$B_1 = 0.21$	$SE\beta_1 = 0.01$	
Beta 23 ( $\beta_{23}$ )	= 0.18	$B_{13} = 0.19$	$SE\beta_{13} = 0.03$	
Beta 16 ( $\beta_{16}$ )	= 0.16	$B_{23} = 0.24$	$SE\beta_{23} = 0.05$	
Constant	= 1.57			
Source	DF	S.S	M.S.S	F
Total	337			
Regression	3	5688.46	1896.15	316.77 ( $P < 0.001$ )
Residual	334	1999.29	5.99	

#### Step IV

Table 5.3.21 shows the results of the step IV regression analysis. It is observed that the fourth highest correlation is for the predictor variable, lack of participation. By adding the above all significant predictor variables R is calculated as 0.87 and the percentage of variation is from 73.99 to 75.17. This is stating an increase in the percentage of 1.18.

The F-value (252.08) is highly significant at 0.001 level for 4/333 - df. It reveals that the predictor variable (lack of participation) is highly significant in predicting the criterion variable.

**Table 5.3.21**  
**Results of Step IV Regression Analysis**

Variable entered	= $X_{1.}$ , $X_{13.}$ , $X_{23}$ and $X_{14}$ (Inertia, Role Conflict, Alienation, and lack of participation)			
Multiple correlation (R)	= 0.87			
Percentage of Variation ( $R^2 \times 100$ )	= 75.17			
Beta 1 ( $\beta_1$ )	= 0.66	$B_1 = 0.19$	$SE\beta_1 = 0.01$	
Beta 23 ( $\beta_{23}$ )	= 0.17	$B_{13} = 0.17$	$SE\beta_{13} = 0.03$	
Beta 16 ( $\beta_6$ )	= 0.16	$B_{23} = 0.26$	$SE\beta_{23} = 0.05$	
Beta 24 ( $\beta_{24}$ )	= 0.12	$B_{14} = 0.15$	$SE\beta_{14} = 0.04$	
Constant	= 3.01			
Source	DF	S.S	M.S.S	F
Total	337			
Regression	4	5779.19	1444.79	252.08 ( $P < 0.001$ )
Residual	333	1908.57	5.73	

### Step V

Results of step V analysis (table 5.3.22) indicate that the fifth highest correlation is with the predictor variable, group pressure. The calculated multiple R is found to be same as in the case of lack of participation (0.87). But the percentage of variation is raised from 75.17 to 75.81 by adding all the significant predictors. And it is seen that, there is an increment of the variation in percentage that is 0.64%.

Here  $F = 208.12$  ( $P < 0.001$ ) for 5/332 - df

The above mentioned F-value is highly significant. So it realizes that, the variable, lack of participation is significant in predicting the criterion variable.

**Table 5.3.22**

**Results of the step V regression analysis**

Variable entered	= $X_1; X_{13}; X_{23}; X_{14}$ and $X_{16}$ (Inertia, role conflict, alienation, lack of participation and group pressure)			
Multiple correlation (R)	= 0.87			
Percentage of Variation ( $R^2 \times 100$ )	= 75.81			
Beta 1 ( $\beta_1$ )	= 0.66	$B_1 = 0.19$	$SE\beta_1 = 0.01$	
Beta 23 ( $\beta_{23}$ )	= 0.13	$B_{13} = 0.14$	$SE\beta_{13} = 0.05$	
Beta 16 ( $\beta_{16}$ )	= 0.16	$B_{23} = 0.25$	$SE\beta_{23} = 0.04$	
Beta 24 ( $\beta_{24}$ )	= 0.11	$B_{14} = 0.14$	$SE\beta_{14} = 0.04$	
Beta 21 ( $\beta_{21}$ )	= 0.09	$B_{16} = 0.13$	$SE\beta_{16} = 0.05$	
Constant	= 3.35			
Source	DF	S.S	M.S.S	F
Total	337			
Regression	5	5828.29	1165.66	208.12 ( $P < 0.001$ )
Residual	332	1859.46	5.60	

**Step VI**

Similarly the sixth highest correlation is found for the predictor variable strenuous physical working condition. Here also the calculated multiple correlation is same as in the above two cases. ( $R = 0.87$ ). However the percentage of variation is raised from 75.81 to 76.29. Thus an increase in the percentage of variation is observed as 0.48% only.

Here  $F = 177.45$  ( $P < 0.001$ ) for 6/331 - df.

The F value is highly significant, so the predictor variable, strenuous physical working condition has the significant role to predict the criterion variable.

**Table 5.3.23**

**Results of the step VI regression analysis**

Variable entered	= $X_1; X_{13}; X_{23}; X_{14}; X_{16}$ and $X_{24}$ (Inertia, role conflict, alienation, lack of participation, group pressure and strenuous physical working condition)			
Multiple correlation (R)	= 0.87			
Percentage of variation ( $R^2 \times 100$ )	= 76.29			
Beta 1 ( $\beta_1$ )	= 0.62	$B_1 = 0.19$	$SE\beta_1 = 0.01$	
Beta 13 ( $\beta_{13}$ )	= 0.12	$B_{13} = 0.13$	$SE\beta_{13} = 0.03$	
Beta 23 ( $\beta_{23}$ )	= 0.13	$B_{23} = 0.20$	$SE\beta_{23} = 0.04$	
Beta 14 ( $\beta_{14}$ )	= 0.10	$B_{14} = 0.13$	$SE\beta_{14} = 0.04$	
Beta 16 ( $\beta_{16}$ )	= 0.09	$B_{16} = 0.13$	$SE\beta_{16} = 0.05$	
Beta 24 ( $\beta_{24}$ )	= 0.09	$B_{24} = 0.11$	$SE\beta_{24} = 0.04$	
Constant	= 3.72			
Source	DF	S.S	M.S.S	F
Total	337			
Regression	6	5864.59	977.43	177.45 ( $P < 0.001$ )
Residual	331	1823.17	5.51	

**Step VII**

Finally, the table 5.3.24 gives the results of step VII regression analysis. It is found that, the last and seventh highest correlation with the predictor variable, projection hostility. This is the only significant contributor among the hostility variables. Here the R is 0.88 and the percentage of variation is changed from 76.29 to 78.67. Thus it shows an increment in the percentage variation that is 0.38% only.

Here  $F = 154.95$  ( $P < 0.001$ ) for 7/330 - df.

The F-value is highly significant, so the variable projection hostility is significantly contributing for the criterion variable, HDI - melancholia.

**Table 5.3.24**

**Results of the step VII regression analysis**

Variable entered	= $X_1; X_{13}; X_{23}; X_{14}; X_{16}; X_{24}$ and $X_{19}$ (Inertia, role conflict, alienation, lack of participation, group pressure, strenuous physical working condition and projection hostility.)			
Multiple correlation (R)	= 0.88			
Percentage of variation ( $R^2 \times 100$ )	= 76.67			
Beta 1 ( $\beta_1$ )	= 0.63	B1 = 0.19	SE $\beta_1$ = 0.01	
Beta 13 ( $\beta_{13}$ )	= 0.09	B <sub>13</sub> = 0.09	SE $\beta_{13}$ = 0.04	
Beta 23 ( $\beta_{23}$ )	= 0.12	B <sub>23</sub> = 0.19	SE $\beta_{23}$ = 0.05	
Beta 14 ( $\beta_{14}$ )	= 0.09	B <sub>14</sub> = 0.12	SE $\beta_{14}$ = 0.04	
Beta 16 ( $\beta_{16}$ )	= 0.09	B <sub>16</sub> = 0.13	SE $\beta_{16}$ = 0.04	
Beta 24 ( $\beta_{24}$ )	= 0.09	B <sub>24</sub> = 0.10	SE $\beta_{24}$ = 0.04	
Beta 9 ( $\beta_9$ )	= 0.07	B <sub>9</sub> = 0.08	SE $\beta_9$ = 0.03	
Constant	= 4.42			
Source	DF	S.S	M.S.S	F
Total	337			
Regression	7	5894.43	842.06	154.95 (P<0.001)
Residual	330	1793.32	5.43	

**Table 5.3.25**

**Details regarding increase in percentage variation**

Step	Variable entered	.R	Increase in R	Percentage variation	Increase in percentage variation
I	Inertia	.82		67.22	
II	Role conflict	.85	.03	71.95	4.73
III	Alienation	.86	.01	73.99	2.04
IV	Lack of Participation	.87	.01	75.17	1.18
V	Group pressure	.87	.00	75.81	0.64
VI	Strenuous physical working condition	0.87	.00	76.29	0.48
VII	Projection hostility	0.88	.01	76.67	0.38

**Comments**

The results of the stepwise regression analysis found that, there are seven significant predictor variables, which can significantly predict the criterion variable, HDI - melancholia.

Here also, it could be say that the characteristic features of inertia have the significant role to develop depression melancholia or endogenous depression. It is based on what are the traits an individual possess. This finding is supported by the Mathew's theory (1995).

Among the sub variables of multiphasic hostility, projection hostility is the only one significant variable has the role to predict depression - melancholia or it will increase the severity of depression.

In the case of sub variables of occupational stress, it is observed that role conflict, alienation, lack of participation, group pressure and strenuous physical working condition are taking the major significant role to predict the severity of depression or melancholia.

Gupta (1982) reported that the dual responsibilities of the home and work call for multiple roles which put great strain on women and it may affect their emotional well-being.

Some professions are likely to perceive more role conflict than those in other professions (Kapur, 1969). Nursing is one such profession which the professional are facing more role conflict.

#### **Part D. Comparison between predictors of HDI - raw score, HDI-17 score and HDI - melancholia**

HDI - raw score gives the result of symptomatology of depression and HDI - 17 is defined as clinical depression and which is helping the researcher to decrease the false diagnosis also, where as HDI - melancholia is treated as discriminate for severity of depression.

In the stepwise regression analysis of the above three criterion variables, it is found that, the variables inertia, alienation, group pressure, lack of autonomy and promotion are the significant predictors of depression symptomatology. But in the case of HDI-17, inertia, guilt, alienation, group pressure, strenuous physical working condition, promotion and job security are the significant predictors for clinical depression. Where as in HDI-melancholia., inertia, role conflict, alienation, lack of participation, group pressure, strenuous physical working condition and projection hostility are the significant contributors for severity of depression.

From the personality dimensions, inertia is the most common factor of all the depressive features. Similarly in the case of occupational stress, alienation and group pressure are the common factors of depression features. Promotion is the predictor variable for both depressive symptomatology and clinical depression where as strenuous physical working condition the determining factor of clinical depression and it increasing the severity of depression also. The other significant predicting variables are differing with the criterion variables.

As in the case of multiphasic hostility variables, guilt is the only one predictor of clinical depression where as projection hostility is contributing for increasing the severity of depression.

Nursing profession itself is highly stressful because they are all dealing with the precious human life. So it is demanding that, nurses should be vigilant all the time when they are on duty.

Many roles or responsibilities which may directly conflict with each other and it results low performance, job dissatisfaction, maladjustments, including emotional problems etc. At home, work place and in social relations, nurses have to perform well according to the roles they are taking. But which is highly stressful.

And they may have group pressure from their senior officers, duty doctors, hospital administrators and from the public also. Many of the nurses were complained about the shortage and lack of adequate number of staff on duty. And the authority is not taking any remedy for managing this crisis. Sometimes, a single nurse is compelled to taking care of nearer to 150 patients in a ward at their duty time, in the government sector hospitals. Due to this, they are suffering with work overload and have to do overtime duty. At the same time they have to meet all the needs and expectations of the

authority as well as the patients both qualitatively and quantitatively for increasing the over all performance and service of the hospital. So the strenuous physical working condition is making them both mentally and physically exhausted.

Even they are ready to work with these demands and situations the promotional opportunities are very limited. Achieving the promotion is the way of getting appreciation and recognition of their service and performance. If it is not happening naturally they may have the problem with dissatisfaction, lack of involvement, burnout etc. And in by chance any considerable mistake from their part, it will affect their job security also.

The above finding is highly supporting the mentioned interviewed data. So it could be reported that, these are all the significant factors of occupational stress. And the affected person is suffering with clear symptoms of clinical depression or melancholia.

## SECTION IV

### *Interaction Effect of Studied Variables with Certain Demographic Variables*

*Part A – Years of service*

*Part B – Marital status*

*Part C – Religion*

*Part D - Qualification*

*Part E – Service sector*

*Part F – Age*

*Part G – Hostility groups*

## **PART A**

### **Interaction between over all multiphasic hostility and its sub variables with years of service and personality dimensions of IAS**

The present analysis had attempted to explore the interaction effect of over all multiphasic hostility and its sub variables with groups of years of service and IAS dimensions of personality. The years of service is classified into three groups that is, 1 to 5 years, 6-10 years and from 11 to above years of service and the personality dimensions are grouped as inertia, activation and stability. The samples included in each service group are 196; 51 and 91 and in personality dimensions 227; 67 and 44 respectively. The results of analysis of variance (ANOVA) of the 2 x 3 factorial design has been summarized in the table 5.4.1. Groups of years of service and personality dimensions have been considered as the independent variables which are function as main sources of variation.

#### **Main effects**

##### **A. Personality and multiphasic hostility**

From the result (table 5.4.1) it is seen that, there are mean differences between self criticism, cynicism, acting out, criticizing others, projection hostility and over all multiphasic hostility with IAS dimensions (types) because the calculated 'F'-values are highly significant at 0.001 level. It suggests that inertia, activation and stability are differing with each other in

the case of above said variables and over all hostility. The variable guilt is not significant at any level.

The mean values and standard deviations of the sources of variance and hostility variables are given in the table 5.4.2. It is observed that multiphasic hostility and its sub variables are differing with personality dimensions because the mean values obtained are varying with each other. In self criticism the highest mean values (17.30 and 17.03) has been found in inertia dimension. It reveals that self criticism is high in inertia dominated personalities.

Feeling of guilt is more or less same in three dimensions of personality because all mean values are having only a slight difference and which is not statistically significant. Cynicism is significantly differing with all dimensions of personality. From the total, the highest mean value is observed in inertia is 19.82 and least in stability 15.72. It suggests that cynicism is more experienced by inertia types. The similar trend is observed in all other variables such as acting out, criticizing others, projection hostility and in over all multiphasic hostility. The highest mean values are found in total are 17.25; 22.17; 18.52 and 108.14 respectively. And the least mean values have been found in stability dimension.

So it can be concluded that, according to the personality dimensions the presence and experience of over all hostility and its sub variables are differing significantly. And inertia dominated personalities are more experiencing self criticism, cynicism, acting out, criticizing others, projection hostility and over all multiphasic hostility. It may be because of, nurses who are having more characteristics traits of inertia. In this study, the sample includes only female nurses. They are supposed to play many roles both in

their home and in workplace. And our society's outlook to women are not allowed to express their emotions highly especially their negative emotions like anger, aggressiveness etc. Just they are suppressing their emotions. And it can be come out in the form of hostility.

### **B. Years of service group and multiphasic hostility**

As in the case of service group, only two variables are significantly differing which are cynicism and criticizing others. Both are significant at 0.01 and 0.05 levels respectively. The highest mean values has been found in service group two (6-10 years) of both inertia and activation which are 20.97 and 20.73 respectively in the case of cynicism. It reveals that cynicism is increasing with the increment of years of service in both inertia and activation dimensions. And the least mean is found in (13.14) group three of service years with stability dimension.

Similarly of criticizing others, the mean values have been found very high in the entire three service group with inertia dimension. The mean values are 22.29, 23.27, 21.36 and in total it is 22.17. It suggests that when the years of service are increasing, criticizing others is also increasing in inertia dominated personality.

### **Interaction effect**

The results from the table 5.4.1 show that, there are two significant interactions between dimension of personality and years of service with over all multiphasic hostility and its sub variables. The significant variables are self criticism and guilt, which are statistically significant at 0.05 and 0.001 levels respectively. It means that, years of service and dimensions of personality have significant effect on increasing self criticism and guilt.

However in the case of guilt, the interaction effect was found in the group two (6-10 years) of years of service with activation dimension of personality and in self criticism it was found in group one (1-5 years) of years of service with inertia dimension.

Table 5.4.1

**Results of two-way ANOVA of overall multiphasic hostility and its sub variables with groups of years of service and personality dimensions of IAS**

Variables	Residual		Main effects						Interaction		
			Personality types			Service years					
	Sum of squares	Mean squares	Sum of squares	Mean squares	F	Sum of squares	Mean squares	F	Sum of squares	Mean squares	F
Self-criticism	3124.99	9.50	230.49	45.24	12.13***	20.98	10.49	1.11	108.82	27.20	2.86*
Guilt	2803.87	8.52	17.22	8.61	1.01	28.73	14.36	1.68	181.94	45.49	5.34***
Cynicism	8180.60	24.87	729.67	364.83	14.67***	255.47	127.73	5.14**	93.96	23.49	.95
Acting out	7107.87	21.60	386.69	193.34	8.95***	18.37	9.18	.43	46.92	11.73	.54
Criticizing others	5003.06	15.21	333.61	166.80	10.97***	99.50	49.75	3.27*	105.49	26.37	1.73
Projection hostility	5209.42	15.83	642.55	321.28	20.29***	38.97	19.49	1.23	52.63	13.16	.83
Over all multi - phasic hostility	90642.90	275.51	9832.71	4916.35	17.85***	1239.75	619.88	2.25	1049.91	262.48	.95

\*\*\* Significant at 0.001 level; \*\* Significant at 0.01 level; \* Significant at 0.05 level.

Table 5.4.2

**Mean and standard deviations of over all multiphasic hostility and its sub variables with groups of years of service and personality dimensions of IAS**

groups	Self criticism				Guilt				Cynicism				Acting out			
variables	1	2	3	Total	1	2	3	Total	1	2	3	Total	1	2	3	Total
Inertia	17.30 (3.43)	17.03 (4.03)	16.31 (2.96)	16.98 (3.41)	14.05 (2.74)	14.27 (3.19)	13.89 (2.55)	14.04 (2.75)	19.94 (5.77)	20.97 (5.25)	18.97 (4.56)	19.82 (5.39)	17.32 (4.94)	17.82 (4.92)	16.81 (4.67)	17.25 (4.85)
Activation	14.37 (2.05)	15.05 (1.51)	16.46 (2.63)	14.96 (2.23)	13.60 (3.23)	15.73 (4.00)	15.85 (1.99)	14.39 (3.30)	17.30 (3.38)	28.73 (6.05)	16.92 (3.79)	17.79 (4.15)	15.28 (4.26)	15.45 (2.21)	15.62 (5.27)	15.37 (4.16)
Stability	16.91 (2.17)	14.71 (2.29)	15.14 (3.06)	16.00 (2.63)	14.65 (2.31)	15.00 (4.12)	11.00 (4.22)	13.55 (3.69)	16.69 (4.02)	17.71 (6.34)	13.14 (2.32)	15.72 (4.34)	13.61 (3.31)	15.71 (5.15)	15.43 (4.54)	14.52 (4.06)
Total	16.61 (3.26)	16.37 (3.51)	16.15 (2.93)	16.45 (3.21)	14.02 (2.81)	14.69 (3.48)	13.73 (3.08)	14.04 (3.00)	18.98 (5.31)	20.47 (5.57)	17.78 (4.66)	18.88 (5.24)	16.43 (4.79)	17.02 (4.57)	16.43 (4.72)	16.52 (4.74)
groups	Criticizing others				Projection hostility				Over all multiphasic hostility							
variables																
Inertia	22.29 (3.55)	23.27 (4.67)	21.36 (4.00)	22.17 (3.89)	18.84 (4.60)	17.82 (4.81)	18.22 (4.44)	18.52 (4.59)	108.69 (19.18)	110.21 (20.08)	105.95 (14.04)	108.14 (18.01)				
Activation	19.44 (2.85)	22.73 (3.90)	20.46 (5.06)	20.18 (3.68)	15.78 (2.02)	16.36 (1.86)	14.23 (2.28)	25.56 (2.43)	95.79 (10.89)	106.45 (14.09)	99.23 (14.32)	98.21 (12.58)				
Stability	19.30 (3.32)	20.00 (7.53)	21.00 (4.67)	19.95 (4.55)	15.69 (1.52)	17.14 (2.67)	14.86 (3.16)	15.65 (2.40)	97.09 (9.20)	100.14 (27.94)	89.00 (12.02)	95.00 (14.64)				
Total	21.32 (3.64)	22.71 (5.01)	21.17 (4.23)	21.49 (4.05)	17.79 (4.16)	17.41 (4.09)	17.13 (4.34)	17.56 (4.19)	104.50 (17.70)	108.02 (20.09)	102.38 (14.99)	104.46 (17.45)				

## **Interaction between over all occupational stress and its sub variables with years of service and IAS personality dimensions**

To explore the interaction effect of over all occupational stress and its sub variables with the groups of years of service and personality dimensions, the data were subjected to two-way analysis of variance (ANOVA). The results are summarized in tables 5.4.3 and 5.4.4.

### **Main Effects**

#### **A. Personality dimensions with occupational stress**

The results show that, there are high significant difference between the three personality dimensions in over all occupational stress and its sub variables except one variable. The calculated 'F' values are found to be significant at 0.001 level. The variable responsibility is not differing with IAS dimension of personality. An over all look into the IAS dimensions indicate that total mean of each and every variables (table5.4.4), it can be seen that all significant variables are possessing high mean in inertia dimension of personality. The least mean values are found for stability in the variables such as qualitative overload, role ambiguity, role conflict, lack of participation, lack of autonomy, lack of challenges, interpersonal relations, promotion, job security, alienation and in over all occupational stress. And the variables like quantitative over load, group pressure, lack of control, strenuous physical working condition are scored least mean values in activation. Here also the results suggest that, the occupational stress and its studied sub variables are high in inertia affected personalities.

## **B. Years of service with occupational stress**

In the case of years of service group, it is observed, only four significant differences which are on the variables with role ambiguity, role conflict, lack of control, and alienation. The F-values of the first two are significant at 0.01 level and the other two are at 0.001 level.

The results from the table 5.4.4. show that, the mean values obtained for role ambiguity, role conflict and lack of control are having only a slight difference with service groups of each other. The difference is observed between group one (1-5 years) and the group three (11 and above). Where as in the case of alienation the mean value is increasing with the years of service. It suggests that, a psychological dissatisfaction with the job is increasing with years of service.

### **Interaction Effect**

The interaction effect results indicate that, there are 6 'F' values differing significantly out of 16 variables. They are qualitative overload, role ambiguity; lack of autonomy, group pressure, lack of challenges and promotion. The variable qualitative overload is highly significant at 0.001 level and lack of autonomy is at 0.01 level and all others significant level is 0.05. It reveals that, the above variables are differing with dimension of personality and with the years of service.

However, in the case of qualitative overload the interaction was found in group three (11 and above) years of service with inertia dimension and in role ambiguity the interaction effect was found in the group two (6-10) of years of service with inertia dimension. Where as in lack of autonomy the interaction was found in group three of years of service with inertia

dimension, and the same was repeated in the case of group pressure and promotion. Similarly for the variable lack of challenges the interaction effect is observed in the group one of years of service with inertia dimension of personality.

Table 5.4.3

**Results of two way ANOVA of over all occupational stress and its sub variables with groups of years of service and personality dimensions of IAS**

Variables	Residual		Main effects						Interaction		
			Personality types			Service years					
	Sum of squares	Mean squares	Sum of squares	Mean squares	F	Sum of squares	Mean squares	F	Sum of squares	Mean squares	F
Quantitative over load	4410.15	13.41	1347.27	673.64	50.25***	3.49	1.75	.13	90.06	22.52	1.68
Qualitative over load	3032.09	9.22	185.67	92.84	10.07***	3.95	1.97	.21	176.81	44.08	4.78***
Role ambiguity	1744.59	5.30	498.99	249.49	47.05***	37.61	18.81	3.55**	50.93	12.73	2.40*
Role conflict	4726.55	14.37	2276.09	1138.05	79.22***	91.55	45.78	3.19**	28.24	7.06	.49
Lack of participation	3910.92	11.89	659.18	329.59	27.73***	13.03	6.52	.55	68.41	17.10	1.44
Lack of autonomy	4000.35	12.16	427.26	213.63	17.57***	10.30	5.15	.42	189.70	47.43	3.90**
Group pressure	3003.87	9.13	629.15	314.58	34.45***	16.69	8.35	.91	88.00	22.00	2.41*
Lack of challenges	4573.43	13.90	1786.37	893.19	64.25***	45.64	22.82	1.64	28.06	7.02	.51
Lack of control	1934.97	5.88	73.48	36.74	6.25***	89.51	44.75	7.61***	77.96	19.49	3.31*
Interpersonal Relations	7830.48	23.80	4315.43	2157.71	90.66***	48.62	24.31	1.02	97.38	24.35	1.02
Responsibility	2049.00	6.23	6.52	3.26	.52	22.44	11.22	1.80	9.37	2.34	.38
Promotion	2458.49	7.47	810.26	405.13	54.22***	8.58	4.29	.57	82.27	20.57	2.75*
Job security	434.05	1.32	96.59	48.29	36.61***	.88	.44	.33	5.02	1.25	.95

Alienation	2284.26	6.94	561.17	280.59	20.41***	110.84	55.42	7.98***	50.77	12.69	1.83
Strenuous physical working condition	3198.13	9.72	1933.13	966.56	99.43***	14.16	7.08	.73	23.53	5.88	.61
Over all occupational stress	135034.67	410.44	184127.69	92063.85	224.31***	498.87	249.44	.61	1706.00	426.50	1.04

\*\*\* Significant at 0.001 level; \*\* Significant at 0.01 level; \* Significant at 0.05 level.

Table 5.4.4

**Means and standard deviations of over all occupational stress and its sub variables with groups of years of service and personality dimensions of IAS**

Groups	Quatitative over load				Qualitative over load				Role ambiguity				Role conflict			
	1	2	3	Total	1	2	3	Total	1	2	3	Total	1	2	3	Total
Inertia 1	18.62 (3.28)	19.67 (4.18)	18.95 (4.24)	18.87 (3.71)	12.37 (2.65)	13.12 (3.14)	12.86 (3.23)	12.62 (2.90)	10.81 (2.19)	11.18 (2.95)	10.25 (2.39)	10.70 (2.39)	18.25 (4.36)	17.00 (3.77)	18.78 (3.78)	18.22 (4.14)
Activation 2	14.35 (3.77)	13.00 (1.61)	15.62 (2.29)	14.37 (3.32)	11.09 (3.32)	9.00 (1.84)	13.00 (3.51)	11.12 (3.35)	8.58 (2.28)	7.82 (2.04)	8.77 (1.01)	8.49 (2.06)	12.65 (2.91)	12.09 (3.18)	14.54 (1.51)	12.93 (2.83)
Stability 3	15.69 (4.20)	14.14 (2.67)	14.29 (4.07)	15.00 (3.94)	11.65 (3.58)	12.00 (3.42)	9.14 (3.44)	10.91 (3.64)	8.43 (2.45)	8.71 (2.93)	6.00 (1.36)	7.70 (2.49)	12.57 (3.31)	11.57 (3.15)	12.14 (3.16)	12.27 (3.19)
Total	17.34 (3.94)	17.47 (4.66)	17.76 (4.39)	17.47 (4.17)	12.01 (2.96)	12.08 (3.35)	12.31 (3.54)	12.09 (3.18)	10.04 (2.48)	10.12 (3.10)	9.38 (2.61)	9.88 (3.63)	16.35 (4.78)	15.14 (4.29)	17.15 (4.30)	16.39 (4.61)
Groups Variables	Lack of participation				Lack of autonomy				Group pressure				Lack of challenges			
Inertia	14.81 (3.45)	14.15 (3.49)	15.16 (3.63)	14.81 (3.51)	21.64 (3.21)	21.24 (3.11)	22.02 (3.97)	21.69 (3.42)	10.71 (2.99)	10.97 (3.71)	10.97 (3.71)	10.82 (3.22)	23.22 (3.39)	22.42 (4.63)	22.06 (4.50)	22.78 (3.94)
Activation	12.28 (3.99)	12.00 (2.49)	12.15 (1.63)	12.21 (3.40)	19.67 (2.98)	20.55 (3.45)	17.38 (3.50)	19.37 (3.23)	7.12 (2.47)	6.64 (1.36)	9.38 (3.01)	7.48 (2.59)	19.12 (3.42)	18.27 (2.72)	19.15 (2.41)	18.98 (3.12)
Stability	12.30 (3.57)	11.57 (1.72)	9.71 (2.70)	11.36 (3.24)	17.61 (3.63)	20.86 (4.09)	20.86 (5.22)	19.16 (4.47)	9.52 (3.36)	6.86 (1.06)	8.43 (1.22)	8.75 (2.70)	16.57 (3.81)	17.43 (3.59)	16.59 (2.65)	16.70 (3.39)
Total	13.96 (3.77)	13.33 (3.27)	13.89 (3.86)	13.85 (3.72)	20.73 (3.41)	21.04 (3.27)	21.16 (4.38)	20.89 (3.71)	9.78 (3.26)	9.47 (3.35)	10.35 (3.47)	9.89 (3.34)	21.54 (4.23)	20.84 (4.64)	20.80 (4.50)	21.24 (4.39)
Groups Variables	Lack of control				Interpersonal relations				Responsibility				Promotion			
Inertia	11.24 (2.29)	10.39 (2.54)	10.72 (2.57)	10.97 (2.42)	26.44 (4.34)	25.69 (5.08)	25.05 (6.44)	25.94 (5.13)	12.18 (2.47)	12.88 (2.88)	12.81 (3.07)	12.46 (2.72)	12.25 (2.76)	11.06 (2.44)	11.77 (3.58)	11.94 (2.99)
Activation	10.33 (2.74)	7.27 (1.62)	10.38 (3.09)	9.84 (2.87)	18.86 (4.24)	18.18 (3.06)	20.85 (4.96)	19.13 (4.26)	12.44 (1.79)	12.91 (1.30)	12.38 (2.10)	12.51 (1.77)	8.28 (1.91)	9.55 (3.75)	10.31 (2.01)	8.88 (2.43)
Stability	11.39	10.14	8.86	10.39	17.74	17.14	16.71	17.32	12.74	12.43	13.43	12.91	8.00	8.71	8.57	8.29

	(2.25)	(.89)	(2.25)	(2.35)	(4.70)	(4.88)	(3.83)	(4.39)	(1.79)	(.53)	(3.08)	(2.17)	(2.04)	(.49)	(1.83)	(1.81)
Total	11.06 (2.41)	9.68 (2.52)	10.38 (2.66)	10.69 (2.54)	23.76 (5.76)	22.90 (2.99)	23.16 (6.65)	23.47 (6.04)	12.31 (2.27)	12.82 (2.39)	12.85 (2.94)	12.53 (2.49)	10.88 (3.46)	10.41 (2.74)	11.07 (2.74)	10.86 (3.16)
Groups Variables	Job security				Alienation				Strenuous physical working condition				Over all occupational stress			
Inertia	3.06 (1.29)	3.39 (1.06)	3.13 (1.16)	3.13 (1.23)	10.44 (2.59)	11.03 (2.98)	11.70 (3.23)	10.88 (2.88)	15.04 (2.84)	15.69 (3.25)	15.52 (3.24)	15.27 (3.02)	220.76 (18.85)	221.64 (21.38)	221.66 (23.68)	221.14 (20.59)
Activation	2.16 (1.04)	1.82 (.40)	2.08 (.95)	2.09 (.95)	8.24 (1.97)	7.72 (1.80)	10.18 (.75)	8.31 (2.25)	10.02 (3.15)	9.73 (2.57)	10.38 (3.25)	10.04 (3.05)	175.02 (13.66)	169.00 (14.32)	184.08 (13.47)	175.79 (14.29)
Stability	2.04 (1.11)	1.86 (.89)	1.57 (.76)	1.86 (.98)	7.30 (2.75)	10.00 (1.91)	8.00 (2.54)	7.95 (2.69)	10.35 (4.05)	9.00 (2.24)	11.00 (3.46)	10.34 (3.63)	161.83 (31.33)	172.29 (15.24)	168.21 (16.32)	165.52 (25.46)
Total	2.74 (1.26)	2.84 (1.19)	2.74 (1.24)	2.76 (1.26)	9.47 (2.80)	10.71 (2.54)	10.65 (3.40)	9.98 (2.99)	13.39 (3.84)	13.49 (4.22)	14.09 (3.92)	13.59 (3.92)	203.51 (31.25)	203.51 (31.25)	208.07 (30.28)	204.91 (30.92)

## **Interaction between HDI-raw score, HDI-17 score and HDI-melancholia with years of service and IAS personality dimension**

The same analysis (two-way ANOVA) was repeated again to study the interaction effect of HDI-raw score, HDI-17 score and HDI-melancholia (depression symptomatology, clinical depression, severity of depression) with groups of years of service and personality dimensions of IAS. The results are given in the table 5.4.5. and in the table 5.4.6.

### **Main Effects**

#### **A. Personality dimensions with 3 types of HDI-scores**

The results from the table 5.4.5 show that all the 'F' values of HDI scores are highly significant at 0.001 level. It means that all the three personality dimensions are differing in the experience of depression symptomatology, clinical depression and in severity of depression. The total mean values (table 5.4.6.) of the personality dimensions indicate that the highest mean values have been found in inertia dimension of all the three HDI-scores. The mean scores are 21.52, 18.62 and 16.13 respectively. It suggests that, inertia dominated personalities that are more susceptible to develop symptoms of depression, clinical depression and depression melancholia. And the least mean scores are found in stability dimension.

#### **B. Years of service group with 3 types of HDI-scores**

An observation into the results have been found that, two variables which HDI-17 and melancholia are differing significantly with groups of years of service. The calculated F-values are found to be significant at 0.001 level. The results realize that the groups of years of service are differing with clinical depression and its severity. But in the mean scores it can be seen that, the mean values are increasing accordingly with the groups of years of

service. In HDI-17, the total mean values for service is increasing from 15.47 to 15.75 and to 16.59. And in HDI-melancholia it is 12.82, 13.09 and 13.74 respectively. It suggests that, clinical depression and depression severity are increasing with the years of service.

According to the interview taken by the researcher, it may be because of the burnout they are facing and lack of job satisfaction. Many nurses were told that they may become burnout very easily after the honey moon stage of the service. And as part of the daily routine they are just coming and going back. Lack of recreational activities also may be the reason for this. And the authorities are not implementing any remedial measures for this problem.

### **Interaction Effect**

From the results (table 5.4.5) it is observed that, there are interaction effect between personality dimensions and groups of years of service. The calculated F-values are found to be significant at 0.05 level. An evaluation into the mean scores (table 5.4.6) includes that, the interaction effect has been found in the case of HDI-raw score in group three (11 and above years) of inertia dimension. The same trend was followed in HDI-17 and melancholia also.

Table 5.4.5

**Results of two-way ANOVA of HDI-raw scores, HDI-17 scores and HDI-melancholia with groups of years of service and personality dimensions of IAS**

Variables	Residual		Main Effects						Interaction		
			Personality types			Service years					
	Sum of Squares	Mean squares	Sum of squares	Sum of squares	F	Sum of squares	Mean squares	F	Sum of squares	Mean squares	F
HDI - raw score	2005.63	6.09	484.17	2420.59	397.07***	25.79	12.89	2.12	65.73	16.43	2.69*
HDI - 17 score	1737.39	5.28	5395.50	2697.75	510.86***	42.21	21.11	3.99**	67.65	16.91	2.30*
HDI-melancholia	1300.76	3.95	6287.23	3143.62	795.11***	22.99	11.49	2.91**	47.16	11.79	2.98*

\*\*\* Significant at 0.001 level; \*\* Significant at 0.01 level; \* Significant at 0.05 level.

Table 5.4.6

**Means and standard deviation of HDI-raw score, 17 score, and melancholia  
with groups of years of service and personality dimensions of IAS**

Groups	HDI-raw score				HDI-17 score				HDI-melancholia			
	1	2	3	Total	1	2	3	Total	1	2	3	Total
Inertia	21.42 (2.77)	21.52 (2.93)	21.72 (1.32)	21.52 (2.46)	18.42 (1.81)	18.32 (2.79)	19.17 (1.37)	18.62 (1.90)	15.96 (1.54)	15.78 (2.41)	16.67 (1.52)	16.13 (1.71)
Activation	13.08 (2.60)	16.22 (1.31)	13.87 (2.09)	13.75 (2.58)	9.57 (3.64)	12.27 (1.91)	11.32 (2.41)	10.35 (3.35)	6.59 (3.13)	8.53 (1.84)	7.46 (1.31)	7.08 (2.75)
Stability	12.95 (2.28)	12.77 (3.73)	13.29 (2.50)	13.03 (2.58)	9.87 (2.50)	9.11 (2.82)	9.68 (2.75)	9.69 (2.58)	6.74 (2.27)	7.56 (2.53)	6.19 (1.93)	6.69 (2.20)
Total	18.59 (4.78)	19.18 (4.34)	19.30 (4.09)	18.88 (4.54)	15.47 (4.78)	15.75 (4.46)	16.59 (4.39)	15.82 (4.65)	12.82 (4.87)	13.09 (4.34)	13.74 (4.79)	13.11 (4.78)

## **PART B.**

### **Interaction effect of over all multiphasic hostility and its sub variables with marital status and personality dimensions of IAS**

#### **Main Effects**

##### **A. Personality dimensions with hostility**

Results from the table 5.4.7 reveal that the calculated six 'F' values are highly significant at 0.001 level except the variable guilt, which is not significant at any level. The same result was interpreted before (table 5.4.1).

##### **B. Groups of marital status with hostility**

The table results indicate that, the calculated 'F' values are not significant at any level. It means, marital status is not significantly effecting over all multiphasic hostility and its sub variables among nurses.

#### **Interaction Effect**

In interaction effect the results (table 5.4.7) show that, there are three significant 'F' values out of seven. They are self criticism, cynicism (0.05 level) and guilt (0.001 level). It realizes that, the experience of these hostility variables are depends upon the marital status and personality dimensions.

The mean and standard deviation from the table 5.4.8 suggest that the highest mean value for self criticism (17.09) and cynicism (20.02) are observed in group I that is married with inertia dimension of personality.

Where as in guilt, the highest mean value 15.68 is found in group I that is married nurses with activation dimension of personality. It may be because of their day to day life experiences, family and work environment etc.

Hence, it can be concluded that married nurses with inertia dimension of personality are more experiencing self criticism and cynicism and guilt is more experienced by married nurses of activation personality.

Table 5.4.7

**Results of two-way ANOVA of over all multiphasic hostility and its sub variables with groups of marital status and personality dimensions of IAS**

Variables	Residual		Main Effects						Interaction		
			Personality type			Marital status					
	Sum of squares	Mean squares	Sum of squares	Mean squares	F	Sum of squares	Mean squares	F	Sum of squares	Mean squares	F
Self criticism	3207.57	9.66	222.58	111.29	11.52***	.35	.35	.04	46.87	23.44	2.43*
Guilt	2871.16	8.65	19.22	9.61	1.11	.38	.38	.04	143.00	71.50	8.27***
Cynicism	8403.97	25.31	708.57	354.28	13.99***	2.16	2.16	.09	123.91	61.95	2.45*
Acting out	7161.12	21.57	387.58	193.79	8.98***	9.47	9.47	.44	2.57	1.29	.06
Criticizing others	5168.67	15.57	324.16	162.08	10.41***	.001	.001	.000	39.39	19.69	1.27
Projection hostility	5299.10	15.96	631.73	315.87	19.79***	.18	.18	.01	1.75	.88	.06
Over all muliphasic hostility	92258.19	277.89	9677.69	4838.84	17.41***	69.43	69.43	.25	604.94	302.47	1.09

\* Significant at 0.05 level; \*\*\* Significant at 0.001 level.

Table 5.4.8

**Means and standard deviations of over all multiphasic hostility and its sub variables with groups of marital status and personality dimensions of IAS**

Groups Variables	Self criticism			Guilt			Cynicism		
	I	II	Total	I	II	Total	I	II	Total
Inertia	17.09 (3.63)	16.87 (3.17)	16.98 (3.41)	13.92 (2.62)	14.15 (2.89)	14.04 (2.75)	20.02 (5.22)	19.60 (5.59)	19.82 (5.39)
Activation	15.35 (2.39)	14.61 (2.06)	14.96 (2.23)	15.68 (2.86)	13.28 (3.29)	14.39 (3.30)	17.71 (4.31)	17.86 (4.06)	17.79 (4.15)
Stability	15.32 (2.46)	17.00 (2.56)	16.00 (2.63)	12.79 (4.27)	14.88 (1.78)	13.55 (3.69)	14.50 (3.96)	17.88 (4.26)	15.73 (4.34)
Total	16.49 (3.37)	16.40 (3.05)	16.45 (3.21)	14.05 (3.08)	14.03 (2.92)	14.04 (3.00)	18.73 (5.27)	19.05 (5.21)	18.88 (5.24)
Groups Variables	Acting Out			Critizing others			Projection hostility		
Inertia	17.36 (4.67)	17.13 (5.05)	17.25 (4.85)	21.94 (4.37)	22.42 (3.32)	22.17 (3.89)	18.53 (4.76)	18.50 (4.42)	18.52 (4.59)
Activation	15.74 (4.06)	15.06 (4.28)	15.37 (4.16)	20.71 (4.13)	19.72 (3.24)	20.18 (3.68)	15.39 (2.55)	15.72 (1.72)	15.57 (2.13)
Stability	14.64 (4.27)	14.31 (3.79)	14.52 (4.06)	20.32 (5.33)	19.31 (2.75)	19.95 (4.55)	15.68 (2.81)	15.63 (1.50)	15.66 (2.40)
Total	16.64 (4.61)	16.39 (4.88)	21.49 (4.05)	21.46 (4.52)	21.51 (3.49)	21.49 (4.05)	17.51 (4.39)	17.61 (3.98)	17.56 (4.19)

<b>Groups Variables</b>	<b>Over all multiphasic hostility</b>								
<b>Inertia</b>	108.79 (17.84)	107.46 (18.24)	108.14 (18.01)						
<b>Activation</b>	100.16 (13.21)	96.53 (11.94)	98.21 (12.58)						
<b>Stability</b>	92.86 (16.65)	98.75 (9.57)	95.00 (14.64)						
<b>Total</b>	104.71 (17.91)	104.19 (16.98)	104.46 (17.45)						

## **Interaction effect of over all occupational stress and its sub variables with groups of marital status and personality dimensions of IAS**

### **Main Effects**

#### **A. Personality dimension with occupational stress**

From the table 5.4.9 results show that, 15 calculated 'F' values are highly significant at 0.001 level out of 16. Here also the variable responsibility is not significant at any level. The result is already interpreted.

#### **B. Groups of marital status with occupational stress**

There are only three 'F' values are significant (see table 5.4.9). They are interpersonal relations (0.05 level), alienation (0.001 level) and strenuous physical working condition (0.01 level). The results suggest that, the experience of these stressors are depends upon the marital status.

An observation into mean and standard deviation from the table 5.4.10 indicate that, for the variable interpersonal relations the highest mean score 24.10 is observed in group II, that is in unmarried nurses group. And the variables alienation and strenuous physical working condition, the highest mean scores 10.41 and 13.94 are found in group I, that is in married nurses group.

So it could be concluded that, problems of interpersonal relations are more experienced by unmarried nurses group and alienation and strenuous physical working condition are more faced by married nurses group.

### **Interaction Effect**

The table (5.4.9) results indicate that, there are two significant 'F' values, which are quantitative overload (0.01 level) and over all occupational stress (0.05 level). It means that, the experience of these variables are depends upon the marital status and the personality dimension of that they belong.

The mean and standard deviation from the table 5.4.10 reveals that, the highest mean values 19.53 and 222.83 for quantitative over load and over all occupational stress are found to be in group I, that is married nurses with inertia dimension of personality. According Mathew (1999) inertia dominated personalities are more prone to stress.

So it is concluded that, married nurses with inertia dominated personalities are more experiencing quantitative over load and over all occupational stress.

Table 5.4.9

**Results of two-way ANOVA of over all occupational stress and its sub variables with groups of marital status and personality dimensions of IAS**

Variables	Residual		Main Effects						Interaction		
			Personality type			Marital status					
	Sum of squares	Mean squares	Sum of squares	Mean squares	F	Sum of squares	Mean squares	F	Sum of squares	Mean squares	F
Quantitative overload	4360.99	13.14	1358.56	679.28	51.71***	25.06	25.06	1.91	117.66	58.83	4.48**
Qualitative overload	3173.09	9.56	185.47	92.73	9.70***	6.72	6.72	.70	32.52	16.26	1.70
Role ambiguity	1826.49	5.50	488.91	244.46	44.44***	1.65	1.65	.30	4.98	2.49	.45
Role conflict	4820.56	14.52	2310.64	1155.32	79.57***	.45	.45	.03	25.34	12.67	.87
Lack of participation	3940.62	11.87	658.09	329.05	27.72***	3.35	3.35	.28	48.39	24.19	2.04
Lack of autonomy	4170.86	12.56	432.26	216.13	17.20***	4.91	4.91	.39	24.58	12.29	.98
Group pressure	3087.75	9.30	643.09	321.55	34.57***	.02	.02	.002	20.79	10.39	1.12
Lack of challenges	4635.24	13.96	1772.41	886.20	63.48***	4.19	4.19	.30	7.70	3.85	.28
Lack of control	2052.62	6.18	71.04	35.52	5.75***	6.47	6.47	1.05	43.35	21.68	3.51

Interpersonal relations	7877.79	23.73	4264.27	2132.13	89.86***	84.28	84.28	3.55*	14.39	7.19	.30
Responsibility	2071.98	6.24	6.07	3.04	.49	8.19	8.19	1.31	.65	.33	.05
Promotion	2539.58	7.65	812.69	406.35	53.12***	2.15	2.15	.28	7.60	3.80	.49
Job security	439.68	1.32	96.03	48.01	36.25***	.007	.007	.005	.25	.12	.09
Alienation	2358.27	7.10	579.05	289.53	40.76***	79.82	79.82	11.24***	7.79	3.89	.55
Strenuous physical working condition	3148.65	9.48	1959.83	979.92	103.32***	52.74	52.74	5.56**	34.43	17.22	1.82
Over all occupational stress	134834.76	406.13	184755.33	92377.66	227.46***	5.53	5.53	.01	2399.25	1199.63	2.95*

\* Significant at 0.05 level; \*\* Significant at 0.01 level; \*\*\* Significant at 0.001 level.

Table 5.4.10

**Means and standard deviations of over all occupational stress and its sub variables with groups of marital status and personality dimensions of IAS**

Group Variables	Quantitative overload			Qualitative overload			Role ambiguity			Role conflict			Lack of participation			Lack of autonomy		
	I	II	Total	I	II	Total	I	II	Total	I	II	Total	I	II	Total	I	II	Total
Inertia	19.53 (4.21)	18.17 (2.96)	18.87 (3.70)	12.68 (3.09)	12.55 (2.70)	12.62 (2.90)	10.63 (2.44)	10.78 (2.33)	10.70 (2.39)	18.44 (4.03)	17.99 (4.27)	18.22 (4.14)	14.79 (3.54)	14.83 (3.48)	14.81 (3.51)	21.91 (3.76)	21.44 (3.03)	21.69 (3.42)
Activation	13.77 (2.75)	14.89 (3.69)	14.37 (3.32)	10.61 (3.33)	11.56 (3.35)	11.12 (3.35)	8.61 (1.86)	8.39 (2.23)	8.49 (2.06)	12.48 (2.80)	13.31 (2.84)	12.93 (2.83)	12.45 (4.41)	12.00 (2.24)	12.21 (3.40)	18.94 (3.61)	19.75 (2.87)	19.37 (3.24)
Stability	14.54 (3.82)	15.81 (4.15)	15.00 (3.95)	10.36 (3.89)	11.88 (3.00)	10.91 (3.64)	7.46 (2.28)	8.13 (2.84)	7.70 (2.49)	12.07 (3.56)	12.63 (2.47)	12.27 (3.19)	10.57 (2.04)	12.75 (3.21)	11.36 (3.24)	19.46 (5.07)	18.63 (3.26)	19.16 (4.47)
Groups Variables	Group pressure			Lack of challenges			Lack of control			Interpersonal relations			Responsibility			Promotion		
Inertia	10.82 (3.74)	10.82 (2.59)	10.82 (3.22)	22.77 (4.80)	22.79 (2.79)	22.78 (3.94)	10.80 (2.49)	11.14 (2.34)	10.97 (2.42)	25.57 (6.09)	26.32 (3.87)	25.94 (5.13)	12.64 (2.95)	12.28 (2.46)	12.46 (2.72)	11.85 (3.49)	12.04 (2.36)	11.94 (2.99)
Activation	7.87 (2.75)	7.14 (2.44)	7.48 (2.59)	18.71 (2.39)	19.22 (3.65)	18.99 (3.12)	10.29 (2.91)	9.44 (2.81)	9.84 (2.87)	18.16 (4.91)	19.97 (3.46)	19.13 (4.26)	12.58 (1.63)	12.44 (1.90)	12.51 (1.77)	9.03 (2.93)	8.75 (1.93)	8.88 (2.43)
Stability	8.36 (2.33)	9.44 (3.22)	8.75 (2.70)	16.34 (3.78)	17.25 (2.57)	16.70 (3.39)	9.75 (2.46)	11.50 (1.71)	10.39 (2.35)	16.93 (4.70)	18.00 (3.83)	17.32 (4.39)	13.04 (2.35)	12.69 (1.85)	12.91 (2.17)	8.00 (2.16)	8.81 (.75)	8.29 (1.81)
Total	9.90 (3.61)	9.87 (3.02)	9.89 (3.34)	21.03 (4.99)	21.46 (3.59)	21.24 (4.37)	10.54 (2.58)	10.80 (2.49)	10.67 (2.54)	22.87 (6.83)	24.10 (4.99)	23.47 (6.04)	12.69 (2.66)	12.36 (2.28)	12.53 (2.49)	10.74 (3.58)	10.99 (2.64)	10.86 (3.16)
Group Variables	Job security			Alienation			Strenuous physical working condition			Over all occupational stress								
Inertia	3.13 (1.18)	3.13 (1.28)	3.13 (1.23)	11.31 (3.09)	10.43 (2.59)	10.88 (2.88)	15.72 (3.34)	14.80 (2.57)	15.27 (3.02)	222.83 (23.61)	219.38 (16.80)	221.14 (20.59)						
Activation	2.03 (.95)	2.14 (.96)	2.09 (.95)	8.68 (1.85)	7.86 (2.02)	8.24 (1.97)	9.87 (2.77)	10.19 (3.30)	10.04 (3.05)	174.29 (14.65)	177.08 (14.06)	175.79 (14.29)						
Stability	1.89 (1.13)	1.81 (.66)	1.86 (.98)	8.61 (2.69)	6.81 (2.34)	7.95 (2.69)	11.04 (3.69)	9.13 (3.26)	10.34 (3.63)	160.96 (28.89)	173.50 (15.79)	165.52 (25.46)						
Total	2.74 (1.25)	2.78 (1.27)	2.76 (1.26)	10.41 (3.10)	9.51 (2.79)	9.98 (2.99)	13.94 (4.15)	13.23 (3.64)	13.59 (3.92)	204.33 (35.02)	205.53 (25.89)	204.91 (30.92)						

## **Interaction effect of three types of HDI-scores with groups of marital status and personality dimensions of IAS**

### **Main Effects**

#### **A. Personality with three types of HDI-scores**

Results from the table 5.4.11 indicate that HDI-raw score, HDI-17 score and HDI melancholia are highly significantly differing with personality dimensions of IAS. The same is already mentioned before.

#### **B. Groups of marital status with three types of HDI-scores**

The table 5.4.11 shows that, the calculated 'F' values are not significant at any level. It means, marital status is not playing any role to the development of depressive symptomatology, clinical depression and severity of depression.

### **Interaction Effect**

Here also the calculated 'F' values are not showing any significant differences at any level. It suggests that, both personality dimensions and marital status are not making any interaction effect for the development of depressive symptomatology, clinical depression and severity of depression.

Table 5.4.11

**Results of two-way ANOVA of HDI-raw score, HDI-17 score and HDI melancholia with groups of marital status and personality dimensions of IAS**

Variables	Residual		Main Effects						Interaction		
			Personality Type			Marital Status					
	Sum of squares	Mean squares	Sum of squares	Mean squares	F	Sum of squares	Mean squares	F	Sum of squares	Mean squares	F
HDI - raw score	2074.57	6.25	4857.72	2428.86	388.69***	6.92	6.92	1.11	15.67	7.84	1.25
HDI - 17 score	1825.14	5.49	5431.57	2715.79	494.01***	1.18	1.18	.21	20.94	10.47	1.90
HDI - melancholia	1342.55	4.04	6325.19	3162.59	782.08***	10.67	10.67	2.64	17.69	8.84	2.19

\*\*\* Significant at 0.001 level.

Table 5.4.12

**Means and standard deviation of HDI-raw score, HDI-17 score and HDI melancholia with groups of marital status and personality dimensions of IAS**

Groups Variables	HDI - raw score			HDI - 17 score			HDI – melancholia		
	I	II	Total	I	II	Total	I	II	Total
Inertia	21.52 (1.94)	21.52 (2.93)	21.52 (2.47)	18.72 (1.93)	18.50 (1.87)	18.62 (1.90)	16.31 (1.78)	15.95 (1.62)	16.13 (1.71)
Activation	14.15 (2.08)	13.41 (2.93)	13.75 (2.58)	9.94 (3.51)	10.70 (3.23)	10.35 (3.35)	6.93 (2.03)	7.21 (3.27)	7.08 (2.75)
Stability	13.44 (2.55)	12.29 (2.48)	13.03 (2.56)	10.05 (2.54)	9.07 (2.62)	9.69 (2.58)	7.20 (2.17)	5.81 (2.02)	6.69 (2.20)
Total	18.92 (4.19)	18.82 (4.89)	18.88 (4.54)	15.78 (4.77)	15.85 (4.53)	15.82 (4.65)	13.19 (4.77)	13.02 (4.79)	13.11 (4.77)

## **PART C.**

### **Interaction effect of over all multiphasic hostility and its sub variables with religion groups and personality dimensions of IAS**

Similar kind of analysis were done to explain the interaction effect of over all multiphasic hostility and its sub variables, over all occupational stress and its sub variables and three types of HDI - scores with religion groups and dimensions of personality. The religion groups are Christian, Hindu and Muslim. The sample description is given in the table 3.1.2. Here the religious groups and personality dimensions are considered as the two sources of variations.

#### **Main effects**

##### **A. Personality dimensions with hostility**

Results from the table 5.4.13 reveal that six variables are showing high significant difference with personality dimensions of IAS. Already it is discussed (see table 5.4.1) and mentioned in the results of interaction effect with groups of years of service.

##### **B. Groups of religion with hostility**

The samples belong to the faith in three religions which are Christian, Hindu and Muslim. The results show that there are five significant differences. The variable self criticism is significant at 0.01 level, the other significant variables like cynicism, criticizing others, projection hostility are significant at 0.05 level and over all multiphasic hostility is highly significant at 0.001 level. It suggests that experience and expression of these variables are differing significantly according with the religion that they belong to.

An over all observation in to mean and standard deviation (table 5.4.14) of the these variables, it is noted that, the highest total mean value

(16.83) is found in group II of the variable self criticism that is for nurses who are belong to Hindu religion. The same trend is followed in the case of cynicism (19.54), criticizing others (21.78) and over all multiphasic hostility (107.05). But in projection hostility the very high mean is observed in group three (18.22) that is for samples belong to Muslim religion.

So it can be included that, self criticism, cynicism, criticizing others and over all multiphasic hostility are more experienced by the nurses who are in Hindu religious faith and projection hostility is more in nurses of Muslim religion.

### **Interaction Effect**

The results indicate that six variables are differing significantly out of seven. The variable projection hostility is not significant at any level. The variables like self criticism, guilt and acting out are significant at 0.001 level, and cynicism and over all multiphasic hostility are highly significant at 0.001 level and the variable criticizing others is at 0.05 level. It suggests that, both personality dimension and religion has a significant role to the feeling and expression of these emotional variables and these dimensions are differing with different combinations of dimensions of personality and religious faith.

Mean and standard deviation from the table 5.4.14 reveals that, in self criticism, the high mean is 17.67 of Hindu (group II) with inertia dimension of personality. And the variable guilt was not found to be significant in the case of personality dimension and in religion group versus hostility but in interaction effect, it is found to be significant.

It is also found that, high mean value (14.51) in group II, that is, Hindus with inertia dimension. The same trend is seen in the case of

cynicism, acting out and in over all multiphasic hostility. In Christian religion practices they have so many opportunities to open and clean their mind by attending retreat, confession, etc. And in Muslim religion, it is very strict for prayer at least five times a day. But in Hindu, there are no such practices. So it may be because of this, they are expressing cynicism, acting out and over all multiphasic hostility.

Table 5.4.13

## Results of two-way ANOVA of multiphasic hostility and its sub variables with religion groups and personality dimensions of IAS

Variables	Residual		Main effects						Interaction		
			Personality types			Religion					
	Sum of squares	Mean squares	Sum of square	Mean squares	F	Sum of squares	Mean squares	F	Sum of squares	Mean squares	F
Self-criticism	3126.53	9.503	241.25	120.63	12.69***	52.80	26.40	2.78**	75.46	18.87	1.99**
Guilt	2931.13	8.91	19.68	9.84	1.11	9.43	4.71	.53	73.98	18.49	2.08**
Cynicism	7780.61	23.65	772.40	386.20	16.33***	167.45	83.73	3.54*	581.97	145.49	6.15***
Acting out	6850.22	20.82	406.02	203.01	9.75***	73.57	36.78	1.77	249.37	62.34	2.99**
Criticizing others	4959.18	15.07	329.96	164.98	10.95***	87.05	43.52	2.89*	161.84	40.46	2.68*
Projection hostility	5149.59	15.65	681.62	340.81	21.77***	98.83	49.42	3.16*	52.61	13.15	.84
Over all multi phasic hostility	86305.86	262.33	10548.77	5274.38	20.11***	2494.76	1247.38	4.76***	4131.94	1032.99	3.94***

\*\*\* Significant at 0.001 level; \*\* significant at 0.01 level; \* significant at 0.05 level.

Table 5.4.14

**Means and standard deviations of over all multiphasic hostility and its sub variables with religion groups and personality dimensions of IAS**

Groups Variables	Self Criticism				Guilt				Cynicism				Acting out			
	1	2	3	Total	1	2	3	Total	1	2	3	Total	1	2	3	Total
Inertia	16.57 (3.19)	17.67 (3.73)	16.58 (2.98)	16.98 (3.41)	13.82 (2.72)	14.51 (2.99)	13.46 (1.77)	14.04 (2.75)	18.80 (4.85)	21.66 (5.47)	18.31 (6.01)	19.82 (5.39)	16.79 (4.91)	18.21 (4.66)	16.12 (4.85)	17.25 (4.85)
Activation	14.36 (2.49)	15.56 (2.31)	14.46 (.88)	14.96 (2.23)	14.82 (2.22)	14.25 (3.48)	14.00 (4.42)	14.39 (3.30)	17.77 (2.94)	17.34 (3.78)	18.92 (6.37)	17.79 (4.15)	14.69 (5.17)	16.22 (3.94)	14.46 (2.18)	15.37 (4.16)
Stability	16.24 (3.02)	15.38 (1.94)	20.00 (.00)	16.00 (2.63)	13.57 (4.62)	13.09 (2.39)	18.00 (.00)	13.55 (3.69)	16.19 (5.09)	14.29 (1.27)	26.00 (.00)	15.73 (4.34)	15.86 (5.06)	12.76 (1.64)	18.00 (.00)	14.52 (4.06)
Total	16.22 (3.16)	16.83 (3.38)	16.07 (2.75)	16.45 (3.21)	13.92 (2.98)	14.23 (3.05)	13.85 (2.96)	14.04 (3.00)	18.31 (4.73)	19.54 (5.47)	18.88 (6.12)	18.88 (5.24)	16.38 (4.99)	16.92 (4.59)	15.73 (4.16)	16.52 (4.74)
Groups Variables	Criticizing others				Projection hostility				Over all multiphasic hostility							
Inertia	21.97 (3.74)	22.95 (4.19)	20.54 (2.87)	22.17 (3.89)	17.87 (4.48)	18.91 (4.58)	20.12 (4.70)	18.52 (4.59)	104.41 (18.58)	114.05 (16.71)	105.46 (14.65)	104.46 (17.45)				
Activation	19.50 (3.61)	20.78 (3.15)	14.85 (4.93)	20.18 (3.68)	15.14 (1.58)	16.06 (2.69)	15.08 (.86)	15.57 (2.13)	96.50 (10.84)	99.94 (11.35)	96.85 (17.79)	98.21 (12.58)				
Stability	21.52 (5.43)	18.57 (3.19)	18.00 (.00)	19.95 (4.55)	15.48 (3.22)	16.00 (1.26)	14.00 (.00)	15.66 (2.40)	98.52 (18.21)	89.57 (6.78)	115.00 (.00)	95.00 (14.64)				
Total	21.57 (4.04)	21.78 (4.14)	20.19 (3.58)	21.49 (4.05)	17.18 (4.19)	17.80 (4.08)	18.22 (4.53)	17.56 (4.19)	102.55 (17.85)	107.05 (17.21)	103.19 (15.89)	104.46 (17.45)				

## **Interaction effect of over all occupational stress and its sub variables with religion group and personality dimension of IAS**

### **Main Effects**

#### **A. Personality dimension with occupational stress**

The results (table 5.4.15) show that, there are 15 high significant differences out of 16 variables. The calculated 'F' values are significant at 0.001 level. Here also the variable responsibility is not significant at any level. It is followed with the same interpretation which is in the table 5.4.3.

#### **B. Religion groups with occupational stress**

From the result, it is found that, there are only five significant differences which are quantitative overload, role ambiguity, lack of participation and strenuous physical working conditions. The variable lack of participation is highly significant at 0.001 level and others are at 0.05 level. It suggests that experience of these stress determinant variables are depends on the religious faith and also based on the religion stress variables are differing.

Among the mean values of the religion group (table 5.4.16) it is seen that, the highest mean value 17.75 is belong to group I, that is the samples who are in Christian belief system. The same trend is observed in the case of role ambiguity and in strenuous physical working condition. The highest mean values are 10.28 and 13.82 respectively. But in the lack of participation

and in promotion, the highest mean (15.49 and 11.41) values are found in group III, that is in Muslim religion.

So it can be concluded that, quantitative overload, role ambiguity and strenuous physical working condition are more experienced by the nurses who are in Christian faith. Where as stress related to lack of participation and promotion, are more experienced by nurses who are in Muslim religious faith.

### **Interaction Effect**

In interaction effect the results show that only four significant differences between personality dimensions and religion. The variables are qualitative overload, lack of autonomy, interpersonal relations and promotion. They are all significant at 0.05 level. It realize that, the experience of these variables are depends upon which personality dimension and religion that they belong to.

An observation into the mean values and standard deviations (table 5.4.16) indicates that, in qualitative overload the highest mean value (12.86) is found for group II, Hindu with inertia dimension of personality. But in other variables, such as lack of autonomy, interpersonal relations and in promotion the highest mean values (22.15; 26.42 & 13.12) are found in group III, Muslim with inertia personality dimension.

It is concluded that, the stressor qualitative overload is more experienced by nurses who are in inertia dimension of personality with Hindu religious faith and the other stressors like lack of autonomy, interpersonal relations and promotion are more experienced by the nurses in same personality dimension with Muslim religious faith.

Table 5.4.15

## Results of two-way ANOVA of occupational stress and its sub variables with religion groups and personality dimensions of IAS

Variables	Residual		Main effects						Interaction		
			Personality types			Religion					
	Sum of squares	Mean squares	Sum of squares	Mean squares	F	Sum of squares	Mean squares	F	Sum of squares	Mean squares	F
Quantitative over load	4355.94	13.24	1333.88	666.94	50.37***	95.90	47.95	3.62*	51.87	12.97	.98
Qualitative overload	3093.16	9.40	189.01	94.50	10.05***	3.34	1.67	.18	115.83	28.96	3.08*
Role of ambiguity	1783.92	5.42	459.53	229.77	42.38***	42.36	21.18	3.91*	6.85	1.71	.32
Role conflict	4792.49	14.57	2323.21	1161.61	79.74***	18.86	9.43	.65	34.99	8.75	.60
Lack of participation	3782.49	11.49	633.90	316.95	27.57***	157.43	78.71	6.85***	52.44	13.11	1.14
Lack of autonomy	4013.87	12.20	430.59	215.29	17.65***	34.52	17.26	1.42	151.96	37.99	3.11*
Group pressure	3021.89	9.19	599.38	299.69	32.62***	28.55	14.02	1.53	58.62	14.66	1.59
Lack of challenges	4589.69	13.95	1729.13	864.57	61.97***	21.90	10.95	.79	35.54	8.89	.64
Lack of control	2049.69	6.23	80.65	40.32	6.47***	23.55	11.78	1.89	29.19	7.29	1.17
Interpersonal relations	7713.23	23.44	4173.74	2086.89	89.01***	38.40	19.20	.82	224.84	56.21	2.39*
Responsibility	2036.72	6.19	6.59	3.29	.53	25.39	12.69	2.05	18.71	4.68	.76
Promotion	2441.08	7.42	835.82	417.91	56.32***	35.34	17.67	2.38*	72.92	18.23	2.46*
Job security	428.87	1.30	95.38	47.69	36.58***	4.36	2.18	1.67	6.71	1.68	1.29
Alienation	2387.47	7.26	574.49	287.25	39.58***	15.79	7.89	1.09	42.62	10.66	1.47
Strenuous physical working condition	3124.40	9.49	1942.38	971.19	102.27***	56.42	28.21	2.97*	54.99	13.75	1.45
Over all occupational stress	135936.67	413.18	181069.30	90534.65	219.12***	444.19	222.09	.54	858.67	214.67	.52

\*Significant at 0.05 level; \*\*\* Significant at 0.001 level.

Table 5.4.16

**Means and standard deviations of over all occupational stress and its sub variables with religion groups and personality dimensions of IAS**

Group Variables	Quantitative overload				Qualitative overload				Role ambiguity				Role conflict				Lack of participation			
	1	2	3	Total	1	2	3	Total	1	2	3	Total	1	2	3	Total	1	2	3	Total
Inertia	19.06 (3.64)	19.21 (3.81)	16.88 (3.14)	18.87 (3.71)	12.39 (2.78)	12.86 (2.86)	12.81 (3.56)	12.62 (2.90)	10.99 (2.24)	10.19 (2.16)	11.12 (3.36)	10.70 (2.39)	17.86 (3.99)	18.60 (4.34)	18.58 (4.14)	18.22 (4.14)	15.07 (3.52)	14.07 (3.32)	16.08 (3.64)	14.81 (3.50)
Activation	14.23 (2.20)	14.53 (4.06)	14.23 (3.03)	14.37 (3.32)	12.00 (3.39)	11.19 (3.40)	9.46 (2.69)	11.12 (3.35)	8.91 (2.22)	8.06 (1.95)	8.85 (1.95)	8.89 (2.06)	13.41 (2.56)	12.38 (3.16)	13.45 (2.29)	12.93 (2.83)	11.14 (1.36)	11.93 (3.21)	14.69 (4.97)	12.21 (3.40)
Stability	14.03 (3.95)	15.86 (4.49)	14.00 (.00)	15.00 (3.95)	10.76 (4.04)	10.57 (3.08)	16.00 (.00)	10.91 (3.64)	7.81 (3.23)	7.67 (1.68)	7.00 (.00)	7.70 (2.89)	11.95 (2.96)	12.62 (3.58)	12.00 (.00)	12.27 (3.19)	11.38 (3.46)	11.19 (3.22)	13.00 (.00)	11.36 (3.24)
Total	17.75 (4.05)	17.62 (4.46)	15.90 (3.26)	17.47 (4.17)	12.13 (3.08)	12.12 (3.15)	11.90 (3.66)	12.09 (3.18)	10.28 (2.66)	9.31 (2.32)	10.19 (3.14)	9.88 (2.63)	16.47 (4.37)	16.25 (4.96)	16.63 (4.37)	16.39 (4.61)	14.04 (3.69)	13.14 (3.48)	15.49 (4.06)	13.85 (3.72)
Group Variables	Lack of autonomy				Group pressure				Lack of challenges				Lack of control				Interpersonal relations			
	1	2	3	Total	1	2	3	Total	1	2	3	Total	1	2	3	Total	1	2	3	Total
Inertia	22.01 (3.27)	21.11 (3.33)	22.15 (4.20)	21.69 (3.42)	11.03 (2.95)	10.39 (3.84)	11.27 (1.87)	10.82 (3.22)	23.21 (3.39)	22.22 (4.76)	22.69 (3.03)	22.78 (3.37)	10.74 (2.34)	11.36 (2.49)	10.69 (2.41)	10.97 (2.42)	25.94 (5.28)	25.79 (5.31)	26.42 (3.82)	25.94 (5.13)
Activation	18.18 (2.97)	19.59 (3.22)	20.85 (3.21)	19.37 (3.24)	8.09 (2.56)	7.16 (2.77)	7.23 (2.17)	7.48 (2.59)	18.95 (2.21)	18.91 (4.02)	19.23 (1.79)	18.99 (3.12)	9.32 (1.49)	9.72 (3.34)	11.00 (3.24)	9.84 (2.87)	21.55 (4.10)	17.75 (3.89)	18.46 (3.84)	19.13 (4.26)
Stability	17.76 (4.47)	20.38 (4.36)	21.00 (.00)	19.16 (4.47)	9.09 (2.52)	8.86 (2.63)	4.00 (.00)	8.75 (2.70)	16.24 (2.51)	17.14 (4.23)	17.00 (.00)	16.70 (3.39)	10.09 (2.55)	10.52 (2.25)	12.00 (.00)	10.39 (2.35)	17.43 (3.99)	17.71 (4.74)	12.00 (.00)	17.32 (4.39)
Total	20.92 (3.84)	20.64 (3.51)	21.68 (3.81)	20.89 (3.71)	10.37 (3.05)	9.41 (3.69)	9.63 (2.96)	9.89 (3.34)	21.69 (4.07)	20.68 (4.93)	21.32 (3.21)	21.24 (4.37)	10.46 (2.32)	10.86 (2.75)	10.85 (2.62)	10.67 (2.54)	24.21 (5.82)	22.69 (6.28)	23.19 (5.82)	23.47 (6.04)

Group Variables	Responsibility				Promotion				Job security				Alienation				Strenuous physical working condition			
Inertia	12.73 (2.48)	12.31 (3.04)	11.77 (2.58)	12.46 (2.72)	11.36 (2.56)	12.36 (3.44)	13.12 (2.67)	11.94 (2.99)	3.09 (1.32)	3.25 (1.17)	2.88 (.91)	3.13 (1.23)	10.64 (3.07)	11.26 (2.60)	10.73 (2.86)	10.88 (2.88)	15.17 (2.79)	15.52 (3.24)	14.92 (3.29)	15.27 (3.02)
Activation	12.18 (1.94)	12.94 (1.54)	12.00 (1.87)	12.51 (1.77)	9.27 (1.93)	8.81 (1.86)	8.38 (4.05)	8.88 (2.43)	2.50 (1.14)	1.94 (.88)	1.77 (.44)	2.09 (.95)	8.64 (1.65)	8.06 (2.17)	8.00 (2.00)	8.24 (1.97)	10.13 (2.18)	10.56 (3.80)	8.62 (1.56)	10.04 (3.65)
Stability	13.38 (2.22)	12.52 (2.15)	12.00 (.00)	12.91 (2.17)	8.76 (.89)	7.76 (2.39)	9.00 (.00)	8.29 (1.81)	1.76 (.76)	2.04 (1.10)	1.00 (.00)	1.86 (.98)	8.00 (2.30)	8.29 (2.93)	4.00 (.00)	7.95 (2.68)	10.19 (3.52)	11.00 (3.55)	5.00 (.00)	10.34 (3.63)
Total	12.74 (2.39)	12.49 (2.64)	11.85 (2.29)	12.53 (2.49)	10.73 (2.55)	10.84 (3.57)	11.41 (3.81)	10.86 (3.16)	2.84 (1.32)	2.76 (1.26)	2.44 (.98)	2.76 (1.26)	10.01 (2.99)	10.07 (2.96)	9.54 (3.09)	9.98 (2.99)	13.82 (3.58)	13.68 (4.13)	12.44 (4.36)	13.59 (3.92)
Group Variables	Overall occupational stress																			
Inertia	220.97 (20.59)	220.66 (21.04)	223.46 (14.75)	221.14 (20.59)																
Activation	178.45 (12.17)	173.78 (17.19)	176.23 (8.81)	175.79 (14.29)																
Stability	170.09 (15.71)	161.57 (33.24)	159.00 (0.00)	165.52 (25.46)																
Total	208.37 (28.20)	200.79 (33.92)	205.34 (29.38)	204.91 (30.92)																

## **Interaction effect of HDI-raw score, HDI-17 and HDI-melancholia with religion groups and personality dimensions of IAS**

### **Main Effects**

#### **A. Personality dimensions with three types of HDI-scores**

Table 5.4.17 reveals that, in personality dimensions all the F-values are highly significantly differing with each other. They are all significant at 0.001 level. It is already interpreted on the basis of results mentioned in table 5.4.5.

#### **B. Religion groups with three types of HDI-scores**

The results show that there are two significant differences, which are HDI raw score and HDI-17 score that is depressive symptomatology and clinical depression. The F-values are found to be significant at 0.05 level. It reveals that the susceptibility of depressive symptomatology and clinical depression are depends upon which religious faith of one belongs to.

Means and standard deviations (table 5.4.18) of the respective variables reveal that in the case of HDI-raw score and HDI-17 score the highest mean values are found in group I, that is, samples who are in Christian belief system. The mean values are 19.19 and 16.34 respectively. So it can be concluded that nurses who are in Christian belief are more susceptible to develop depressive symptomatology and clinical depression.

### **Interaction effect**

The table 5.4.17 results indicate that only one significant F-value is observed, that is HDI-melancholia. The calculated F-value is highly significant at 0.001 level. It suggests that, both personality dimension and religion have significant role in the development of depression melancholia or increasing the severity of depression. From the table 5.4.18, the interaction group is found with the high mean score of 16.42 that is for group II (Hindu) with inertia dimension of personality.

Table 5.4.17

**Results of two-way ANOVA of HDI-raw score, HDI-17 score and HDI-melancholia with religion groups and personality dimensions of IAS**

Variables	Residual		Main effects						Interaction		
			Personality types			Religion					
	Sum of squares	Mean squares	Sum of squares	Mean squares	F	Sum of squares	Mean squares	F	Sum of squares	Mean squares	F
HDI – raw score	2020.19	6.14	4840.68	2420.34	394.17***	40.59	20.29	3.31*	36.36	9.01	1.48
HDI - 17 score	1744.36	5.30	5367.48	2683.74	506.17***	65.89	32.94	6.21*	37.01	9.25	1.75
HDI - melancholia	1284.77	3.91	6262.19	3131.09	801.80***	11.37	5.68	1.46	74.77	18.69	4.79***

\*\*\* Significant at 0.001 level; \* Significant at 0.05 level.

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Table 5.4.18

**Means and standard deviations of HDI-raw score, HDI-17 score and HDI melancholia with religion groups and personality dimensions of IAS**

Groups Variables	HDI-Raw Score				HDI-17 Score				HDI-Melancholia			
	1	2	3	Total	1	2	3	Total	1	2	3	Total
Inertia	21.39 (2.71)	21.85 (1.67)	21.03 (3.36)	21.52 (2.47)	18.57 (2.18)	18.85 (1.36)	18.04 (2.01)	18.61 (1.40)	16.06 (2.01)	16.42 (1.22)	15.48 (1.48)	16.13 (1.71)
Activation	13.95 (2.52)	13.85 (2.98)	13.18 (1.45)	13.75 (2.58)	11.08 (2.45)	10.67 (3.39)	8.35 (4.03)	10.35 (3.35)	7.69 (1.96)	6.47 (3.43)	7.55 (1.63)	7.08 (2.75)
Stability	12.53 (2.99)	13.91 (1.59)	9.00 (.00)	13.03 (2.56)	9.53 (2.81)	10.13 (2.30)	6.70 (.00)	6.69 (2.58)	5.90 (1.92)	7.70 (2.13)	4.50 (.00)	6.69 (2.20)
Total	19.19 (4.53)	18.79 (4.39)	17.95 (5.02)	18.78 (4.54)	16.34 (4.35)	15.62 (4.62)	14.42 (5.56)	15.82 (4.65)	13.56 (4.59)	12.79 (5.07)	12.43 (4.37)	13.11 (4.78)

## **PART D.**

### **Interaction effect of over all multiphasic hostility and its sub variables with levels of qualification and personality dimensions of IAS**

Two-way ANOVA was performed to investigate the interaction effect of over all multiphasic hostility and its sub variables, over all occupational stress and its sub variables and three types of HDI-scores with groups of qualifications and three dimensions of personality. The qualification wise grouping was based on the sample's professional degrees. The classifications of professional degrees are Bachelor degree in nursing (B.Sc. (N)) and Diploma in General nursing and midwifery (GNM). The qualification level is considered as the sources of variation along with personality dimensions.

#### **Main effects**

##### **A. Personality dimensions with hostility**

From the table 5.4.19 results indicate that, except the variable guilt all other sub variables are differing significantly. Because in mean difference the calculated 'F'-values are highly significant at 0.001 level. The interpretations are already given along with the table 5.4.1.

##### **B. Levels of qualification with hostility**

The results show that, there is only one significant mean difference (0.05 level) that is for projection hostility. It reveals that the expression of projection hostility is differing with what professional qualification they have. An observation into the mean and standard deviation (table 5.4.20) indicates that the highest mean value is founded in group I for B.Sc.(N). An interview with them, it was learnt that, there is ego conflict and fight between B.Sc. degree nurses and GNM degree nurses. So it may be because of the highly

qualified (B.Sc. degree) nurses are showing more projection hostility towards opposite group.

### **Interaction Effect**

In interaction effect (table 5.4.19) it was found only one significant mean difference (0.01 level) that is also for projection hostility. The result suggests that, the expression of projection hostility is differing with the personality dimensions and professional qualification. The mean and standard deviation from the table 5.4.20 reveal that, the highest mean value (19.17) is found in group I (B.Sc.(N)) with inertia dimension of personality. In their professional duties B.Sc. nurses and GNM nurses are all expected to do all kind of duties without any partiality and difference. But there is an unhealthy competition and conflict between B.Sc. nurses and GNM nurses. And B.Sc. nurses have some superiority complex also. So naturally they are projecting as others are the causal factors of their own unluck, the working conditions and other negative situations etc.

Table 5.4.19

**Results of two-way ANOVA of over all multiphasic hostility and its sub variables with levels of qualification and personality dimensions of IAS**

Variables	Residual		Main Effects						Interaction		
			Personality Types			Qualification					
	Sum of Squares	Mean squares	Sum of squares	Sum of squares	F	Sum of squares	Mean squares	F	Sum of squares	Mean squares	F
Self criticism	3220.81	9.70	209.83	104.93	10.82***	5.75	5.75	.59	28.23	11.12	1.46
Guilt	3000.98	9.04	18.38	9.19	1.02	1.11	1.11	.12	12.45	6.23	.69
Cynicism	8503.38	25.61	686.21	343.11	13.39***	.56	.56	.02	26.09	13.04	.51
Acting out	7168.20	21.59	373.42	186.71	8.65***	.08	.08	.00	4.88	2.44	.11
Criticizing others	5186.07	15.62	312.66	156.03	9.99***	.26	.26	.02	21.73	10.87	.69
Projection hostility	5093.65	15.34	547.21	273.60	17.83***	74.59	74.59	4.86*	132.79	66.39	4.33**
Over all multiphasic hostility	91735.65	276.31	8608.76	4304.38	15.58***	500.07	500.07	1.81	696.84	348.42	1.26

Table 5.4.20

**Means and standard deviation of HDI-raw score, HDI-17, score and HDI-melancholia with levels of qualification and personality dimensions of IAS**

Groups Variables	Self criticism			Guilt			Cynicism			Acting out		
	I	II	Total	I	II	Total	I	II	Total	I	II	Total
Inertia	17.23 (3.25)	16.63 (3.61)	16.98 (3.41)	13.99 (2.68)	14.09 (2.80)	14.04 (2.75)	19.81 (5.40)	19.82 (5.42)	19.82 (5.39)	17.30 (4.62)	17.17 (5.19)	17.25 (4.85)
Activation	14.47 (2.21)	15.35 (2.20)	14.96 (2.23)	14.53 (3.14)	14.27 (3.47)	14.39 (3.30)	17.53 (3.84)	18.00 (4.42)	17.79 (4.15)	15.20 (4.75)	15.51 (3.69)	15.37 (4.16)
Stability	16.20 (2.39)	15.89 (2.78)	16.00 (2.63)	14.27 (3.45)	13.17 (3.80)	13.55 (3.69)	15.73 (4.34)	16.73 (4.85)	15.21 (4.05)	14.52 (4.06)	14.20 (4.25)	14.69 (4.03)
Total	16.68 (3.19)	16.21 (3.22)	16.45 (3.21)	14.11 (2.82)	13.97 (3.19)	14.04 (3.00)	19.16 (5.23)	18.57 (5.24)	18.88 (5.24)	16.68 (4.71)	16.34 (4.77)	16.52 (4.74)
Groups Variables	Criticizing others			Projection hostility			Over all multiphasic hostility					
Inertia	22.27 (3.69)	22.03 (4.17)	22.17 (3.89)	19.17 (4.85)	17.60 (4.04)	18.52 (4.59)	109.67 (15.94)	106.01 (20.43)	108.14 (18.00)			
Activation	19.67 (3.46)	20.59 (3.85)	20.17 (5.68)	14.70 (1.64)	16.27 (2.24)	15.57 (2.13)	96.43 (11.57)	99.65 (13.31)	98.21 (12.68)			
Stability	20.40 (5.30)	19.72 (4.19)	19.95 (4.55)	16.80 (2.04)	15.07 (2.39)	15.66 (2.40)	98.53 (18.91)	93.17 (11.84)	95.00 (14.64)			
Total	21.67 (3.93)	21.29 (4.19)	21.49 (4.05)	18.21 (4.60)	16.84 (3.57)	17.56 (4.19)	106.49 (16.43)	102.24 (18.29)	104.46 (17.45)			

## **Interaction effect of over all occupational stress and its sub variables with levels of qualification and personality dimensions of IAS**

### **Main Effects**

#### **A. Personality dimensions with occupational stress**

From the results (table 5.4.21) it is found that over all occupational stress and its sub variables are showing high significant (0.001 level) mean differences except the variable responsibility. The same result was already before.

#### **B. Levels of qualification with occupational stress**

The results indicates that, there are five significant (0.01 level) mean differences for the variables qualitative overload, group pressure, lack of control, interpersonal relations and responsibility. It suggests that the experience of these stressors are differing with professional qualification. The mean values and standard deviations from the table 5.4.22 show that, the highest mean values for qualitative overload, group pressure and responsibility (12.09; 9.97 and 12.80) are in group II of GNM. Since it is a diploma degree, they got only limited training and teaching. So lack of skills and proper training naturally will affect their performance. And they are being pressurized from their senior colleagues and other professionals and given by more responsibilities and duties. Where as for the variables lack of control and interpersonal relations the highest mean values are (11.09 and 24.47) founded in group I (B.Sc. Nursing).

So it can be concluded that qualitative overload, group pressure and responsibility are the major stressors of the nurses who are having GNM as professional qualification where as lack of control and interpersonal relations

are the major stressors of nurses who are having B.Sc.(N) as their professional degree.

### **Interaction effect**

Table 5.4.21 show that only one significant mean difference (0.01 level) in interaction effect that is for the variable lack of autonomy. It suggests that the subjective experience of lack of autonomy is based on personality dimension and qualification. The mean and standard deviation (table 5.4.22) reveals that, the highest mean value (21.93) is group I of GNM with inertia personality dimension. It means that, nurses who are having GNM professional qualification with inertia personality dimension are more experiencing lack of autonomy. The nurses who are having high levels of degrees are trying to dominating to their work places than those who are under qualified. So naturally they are rejected to getting more freedom and autonomy.

Table 5.4.21  
**Results of two-way ANOVA of over all occupational stress and the sub variables with levels of qualification and personality dimensions of IAS**

Variables	Residual		Main Effects						Interaction		
			Personality Types			Qualification					
	Sum of Squares	Mean squares	Sum of squares	Sum of squares	F	Sum of squares	Mean squares	F	Sum of squares	Mean squares	F
Quantitative over load	4457.75	13.43	1388.59	694.29	51.71***	34.06	34.06	2.54	11.89	5.95	.44
Qualitative overload	3153.12	9.49	208.10	104.05	10.96***	30.15	30.15	3.17**	29.07	14.51	1.53
Role of ambiguity	1828.87	5.51	472.94	236.47	42.93***	.26	.26	.05	4.00	2.00	.36
Role conflict	4807.22	14.48	2326.49	1163.25	80.34***	25.82	25.82	1.78	13.29	6.45	.45
Lack of participation	3968.85	11.95	634.35	317.18	26.53***	.83	.83	.07	22.69	11.35	95
Lack of autonomy	4125.06	12.43	446.93	223.47	18.99***	17.03	19.03	1.37	58.27	29.14	2.35**
Group pressure	3069.81	9.25	667.87	333.93	36.12***	26.74	26.74	2.89**	12.02	6.01	.65
Lack of challenges	4641.14	13.98	1673.53	846.77	65.57***	5.90	5.90	.42	.93	.05	.003
Lack of control	2046.08	6.16	54.75	27.37	4.44***	50.32	50.32	8.17**	6.03	3.02	.49
Interpersonal relations	7870.50	23.71	4000.82	2000.41	84.38***	65.84	65.84	2.78**	40.13	20.07	.85
Responsibility	2051.39	6.18	4.21	2.10	.34	19.50	19.50	3.16**	9.91	4.96	.80
Promotion	2525.45	7.61	800.21	400.11	52.59***	.73	.73	.09	23.16	11.58	1.52
Job security	437.50	1.32	93.16	46.58	35.35***	.003	.003	.002	2.43	1.22	.92
Alienation	2410.54	7.26	583.59	291.79	40.19***	15.67	15.67	2.16	19.66	9.83	1.35
Strenuous physical working condition	3226.26	9.72	1920.47	960.24	98.81***	2.58	2.58	.61	6.98	3.49	.36
Over all occupational stress	137122.68	413.02	180713.09	90356.55	218.77***	78.69	78.69	.19	38.17	19.08	.05

\*\*\* significant at 0.001 level; \*\* significant at 0.01 level.

Table 5.4.22

**Means and standard deviations of overall occupational stress and its sub variables with levels of qualification and personality dimensions of IAS**

Groups Variables	Quantitative overload			Qualitative overload			Role ambiguity			Role conflict			Lack of participation			Lack of autonomy		
	I	II	Total	I	II	Total	I	II	Total	I	II	Total	I	II	Total	I	II	Total
Inertia	18.52 (3.72)	19.35 (3.65)	18.89 (3.71)	12.25 (2.86)	13.13 (2.89)	12.62 (2.90)	10.69 (2.28)	10.73 (2.54)	10.70 (2.39)	17.90 (4.29)	18.66 (3.91)	18.22 (4.14)	14.98 (3.53)	14.57 (3.48)	14.81 (3.51)	21.52 (3.58)	21.93 (3.19)	21.69 (3.42)
Activation	14.43 (3.82)	14.32 (2.89)	14.37 (3.32)	11.43 (3.65)	10.86 (3.11)	11.13 (3.35)	8.50 (1.86)	8.49 (2.22)	8.49 (2.06)	12.63 (2.71)	13.16 (2.94)	12.93 (2.83)	12.09 (4.09)	12.29 (2.77)	12.21 (3.40)	19.70 (3.25)	19.11 (3.25)	19.37 (3.24)
Stability	14.40 (4.81)	15.31 (3.48)	15.00 (3.95)	10.20 (3.71)	11.28 (3.61)	10.91 (3.64)	8.13 (2.64)	7.48 (2.43)	7.70 (2.49)	12.60 (3.18)	12.10 (3.23)	12.27 (3.19)	10.60 (4.32)	11.76 (2.52)	11.36 (3.24)	17.53 (4.55)	20.00 (4.27)	19.16 (4.47)
Total	17.48 (4.22)	17.47 (4.13)	17.47 (4.17)	11.94 (3.12)	12.27 (3.23)	12.09 (3.18)	10.10 (2.46)	9.62 (2.78)	9.88 (2.63)	16.56 (4.59)	16.22 (4.64)	16.39 (4.61)	14.12 (3.98)	13.54 (3.39)	13.85 (3.72)	20.87 (3.79)	20.93 (3.61)	20.89 (3.71)
Groups Variables	Group Pressure			Lack of challenges			Lack of control			Interpersonal relations			Responsibility			Promotion		
	I	II	Total	I	II	Total	I	II	Total	I	II	Total	I	II	Total	I	II	Total
Inertia	10.47 (3.13)	11.31 (3.30)	10.82 (3.22)	22.90 (4.15)	22.61 (3.65)	22.78 (3.94)	112.4 (2.40)	10.58 (2.30)	10.97 (2.41)	26.45 (5.37)	25.23 (4.72)	25.94 (5.13)	12.17 (2.89)	12.87 (2.41)	12.46 (2.72)	12.05 (3.17)	11.78 (2.73)	11.94 (2.99)
Activation	7.50 (2.81)	7.46 (2.44)	7.48 (2.59)	19.10 (3.14)	18.89 (3.14)	18.99 (3.12)	10.57 (2.66)	9.24 (2.93)	9.84 (2.87)	18.87 (4.46)	19.35 (4.13)	19.13 (4.26)	12.60 (2.11)	12.43 (1.46)	12.51 (1.77)	8.40 (2.25)	9.27 (2.52)	8.88 (2.43)
Stability	8.67 (3.49)	8.79 (2.26)	8.75 (2.70)	16.87 (3.81)	16.62 (3.21)	16.70 (3.39)	10.80 (1.97)	10.17 (2.54)	10.39 (2.35)	18.27 (4.09)	16.83 (4.52)	17.32 (4.39)	12.67 (1.72)	13.03 (2.38)	12.91 (2.17)	7.73 (2.15)	8.59 (1.57)	8.29 (1.81)
Total	9.81 (3.30)	9.97 (3.38)	9.89 (3.34)	21.75 (4.45)	20.68 (4.22)	21.24 (4.37)	11.09 (2.46)	10.20 (2.54)	10.67 (2.54)	24.47 (6.13)	22.37 (5.75)	23.47 (6.04)	12.28 (2.69)	12.80 (2.22)	12.53 (2.49)	11.07 (3.39)	10.63 (2.87)	10.86 (3.16)
Groups Variables	Job security			Alienation			Strenuous physical working condition			Over all occupational stress								
	I	II	Total	I	II	Total	I	II	Total	I	II	Total						
Inertia	3.08 (1.24)	3.19 (1.21)	3.13 (1.23)	10.83 (2.86)	10.95 (2.92)	10.88 (2.88)	15.27 (3.34)	15.28 (2.52)	15.27 (3.02)	220.54 (20.90)	221.98 (20.24)	221.14 (20.59)						
Activation	2.27 (1.23)	1.95 (.62)	2.09 (.95)	7.73 (1.68)	8.65 (2.11)	8.24 (1.97)	9.90 (3.08)	10.16 (3.06)	10.04 (3.05)	175.90 (13.62)	176.70 (15.00)	175.79 (14.29)						
Stability	1.93 (.79)	1.83 (1.07)	1.86 (.98)	7.00 (2.85)	8.45 (2.52)	7.95 (2.69)	9.73 (2.84)	10.66 (3.98)	10.34 (3.63)	165.27 (28.15)	165.66 (24.49)	165.52 (25.46)						
Total	2.85 (1.27)	2.66 (1.25)	2.76 (1.26)	9.98 (3.06)	9.97 (2.91)	9.98 (2.99)	13.89 (4.01)	13.27 (3.81)	13.59 (3.92)	208.29 (29.46)	201.19 (32.12)	204.91 (30.91)						

## **Interaction Effect of HDI-raw score, HDI-17 score and HDI-melancholia with levels of qualification and personality dimensions of IAS**

### **Main effects**

#### **A. Personality dimensions with three types of HDI-scores**

From the table 5.4.23 results reveals that HDI-raw score, HDI-17 score and HDI-melancholia are significantly differing with personality dimensions. The calculated F-values are highly significant at 0.001 level.

#### **B. Levels of qualification with three types of HDI-scores**

The results show that, there are no significant mean differences. It means that qualifications have no effect in depressive symptomatology, clinical depression and depression melancholia.

### **Interaction effect**

In interaction effect, table 5.4.23 shows, two significant F-values for the variables HDI-raw score and HDI-17 score. It suggests that, the experience of depressive symptomatology and clinical depression are differing with personality dimension and qualification. From the table 5.4.24, the highest mean values are observed for both variables (21.65 and 18.71) with group I of B.Sc.(N) in inertia dimension of personality. High levels of qualification and one's personality type have significant influence on depression or it may be because of highly qualified professionals working with under qualified professionals in creating more stress and hostility.

Table 5.4.23

**Results of two-way ANOVA of HDI-raw score, HDI-17 score and HDI-melancholia with levels of qualification and personality dimensions of IAS**

Variables	Residual		Main Effects						Interaction		
			Personality types			Qualification					
	Sum of Squares	Mean squares	Sum of squares	Sum of squares	F	Sum of squares	Mean squares	F	Sum of squares	Mean squares	F
HDI - raw score	2012.12	6.06	4775.44	2387.72	393.98***	7.07	7.07	1.17	77.97	38.99	6.43**
HDI-17 score	1754.34	5.28	5366.84	2683.42	507.82***	13.36	13.36	2.53	79.55	39.78	7.53**
HDI-melancholia	1348.57	4.06	6203.81	3101.90	763.65***	5.81	5.81	1.43	16.53	8.27	2.04

\*\*\* Significant at 0.001 level; \*\* significant at 0.01 level

Table 5.4.24

**Means and standard deviations of HDI-raw score, HDI-17 score and HDI-melancholia with levels of qualification and personality dimensions of IAS**

Variables	HDI-raw score			HDI-17 score			HDI-melancholia		
		21.65 (2.68)	21.33 (2.14)	21.52 (2.47)	18.71 (1.93)	18.48 (1.85)	18.62 (1.90)	16.14 (1.71)	16.11 (1.72)
Inertia	21.65 (2.68)	21.33 (2.14)	21.52 (2.47)	18.71 (1.93)	18.48 (1.85)	18.62 (1.90)	16.14 (1.71)	16.11 (1.72)	16.13 (1.71)
Activation	12.59 (1.75)	14.69 (2.78)	13.75 (2.58)	9.13 (2.99)	11.34 (3.34)	10.35 (3.35)	6.49 (2.61)	7.56 (2.80)	7.08 (2.75)
Stability	12.54 (2.85)	13.28 (2.41)	13.03 (2.56)	9.08 (2.53)	10.00 (2.59)	9.69 (2.58)	6.31 (2.19)	6.89 (2.22)	6.69 (2.20)
Total	19.35 (4.72)	18.36 (4.29)	18.88 (4.54)	16.27 (4.73)	15.31 (4.52)	15.82 (4.65)	13.68 (4.66)	12.49 (4.84)	13.11 (4.78)

## **PART E.**

### **Interaction effect of over all multiphasic hostility and its sub variable with groups of service sectors and personality dimensions of IAS**

To study the interaction effect of over all multiphasic hostility and its sub variables, over all occupational stress and its sub variables and three types of HDI-scores with groups of service sector and personality dimensions, two-way ANOVA was performed. There are two service sectors which are government and private hospitals. The total sample from government hospital is 150 female nurses and from private hospital it is 188. Here the two service sectors and personality dimensions are considered as the two sources of variance.

#### **Main Effects**

##### **A. Personality dimensions with hostility**

Results from the table 5.4.25 reveal that, there are six significant differences found because the F-value obtained are statistically and highly significant at 0.01 level. It is already interpreted and discussed before.

##### **B. Groups of service sectors with hostility**

The table 5.4.25 indicates that, only three F-values are significant at 0.05 level. They are self criticism, guilt and projection hostility. Here the notable difference is shown by the variable guilt. It suggests that, the experience of self-criticism, guilt and projection hostility are differing with the service sector in which nurses are working. The mean and standard deviation from the table 5.4.26 reveals that, for all the three significant variables, the highest total mean values are founded in group II, that is in private sector. According to the interview with them, it was learnt that nurses

who are in private hospitals are more hostile towards the management of the hospitals. Because their payment is very low and the authority is not ready to increase their salary according to their qualification, years of experience and the service they are rendering. And therefore it can be concluded that nurses who are working in private hospitals are more subjected to self criticism, guilt and projection hostility.

### **Interaction effect**

The results (table 5.4.25) show that there are only two significant mean differences in interaction effect, which are self criticism and criticizing others because the calculated F-values are significant at 0.01 level. It realizes that the self criticism and criticizing others are differing accordingly with personality dimension and the working sector. And in respective of both variables, the interaction group was found in private sector (group II) with inertia dimension. Their mean values are 17.63 and 22.30 respectively. It also realizes that nurses who are in private sector are more showing inertia dominated personalities and along with its characteristics traits self criticism and criticizing others are very high in the particular sample group.

Table 5.4.25

**Results of two-way ANOVA over all multiphasic hostility and its sub variables with groups of service sector and personality dimensions of IAS**

Variables	Residual		Main Effects						Interaction		
			Personality Types			Service Sector					
	Sum of Squares	Mean squares	Sum of squares	Sum of squares	F	Sum of squares	Mean squares	F	Sum of squares	Mean squares	F
Self criticism	3118.86	9.39	239.03	119.51	12.72***	47.13	47.13	5.03*	88.81	4.40	4.73**
Guilt	2969.79	8.95	12.98	6.49	.73	33.34	33.34	373*	11.42	5.71	.64
Cynicism	8402.72	25.31	711.58	355.79	14.06***	67.86	67.86	2.68	59.45	29.72	1.17
Acting out	7111.98	21.42	383.32	191.66	8.95***	.07	.08	.00	61.11	30.56	1.43
Criticizing others	5111.73	15.39	320.23	160.12	10.39***	11.81	11.18	.73	85.15	42.58	2.77**
Projection hostility	5179.86	15.60	649.68	324.84	20.82***	64.78	64.78	4.15*	56.39	28.19	1.81
Over all multiphasic hostility	91180.13	274.64	9722.25	4861.13	17.70***	488.84	488.84	1.78	1263.59	631.59	2.30

\*\*\* Significant at 0.001 level; \*\* Significant at 0.01 level; \* Significant at 0.05 level.

Table 5.4.26

**Means and standard deviations of over all multiphasic hostility and its sub variables with groups of service sector and personality dimensions of IAS**

Variables \ Groups	Self Criticism			Guilt			Cynicism			Acting out		
	1	2	Total	1	2	Total	1	2	Total	1	2	Total
Inertia	16.21 (2.36)	17.63 (3.99)	16.98 (3.41)	13.68 (2.76)	14.33 (2.72)	14.04 (2.75)	19.03 (4.63)	20.48 (5.91)	19.82 (5.39)	17.02 (4.67)	17.44 (5.01)	17.25 (4.85)
Activation	15.77 (2.85)	14.56 (2.03)	14.96 (2.23)	14.36 (3.13)	14.40 (3.42)	14.39 (3.30)	18.27 (4.00)	17.56 (4.24)	17.79 (4.15)	16.59 (4.25)	14.78 (4.03)	15.37 (4.16)
Stability	16.00 (2.23)	16.00 (3.11)	16.00 (2.63)	12.92 (3.89)	14.30 (3.37)	13.55 (3.69)	15.58 (3.90)	15.90 (4.84)	15.73 (4.34)	14.29 (3.95)	14.80 (4.27)	14.52 (4.06)
Total	16.11 (2.32)	16.72 (3.76)	16.45 (3.21)	13.66 (3.02)	14.35 (2.95)	14.04 (3.00)	18.37 (4.56)	19.29 (5.68)	18.88 (5.24)	16.52 (4.59)	16.52 (4.86)	16.52 (4.74)
Variables \ Groups	Criticizing others			Projection hostility			Overall Multiphasic hostility					
Inertia	22.02 (4.13)	22.30 (3.68)	22.17 (3.89)	17.77 (4.31)	19.15 (4.73)	18.52 (4.59)	105.42 (14.50)	110.44 (20.28)	108.14 (18.01)			
Activation	21.04 (4.51)	19.76 (3.17)	20.18 (3.68)	15.27 (2.31)	15.71 (2.05)	15.57 (2.13)	101.32 (13.35)	96.69 (12.05)	98.20 (12.57)			
Stability	21.08 (5.16)	18.60 (3.35)	19.95 (4.55)	16.13 (1.99)	15.10 (2.77)	15.65 (2.40)	95.58 (15.84)	94.30 (13.42)	95.00 (14.64)			
Total	21.73 (4.36)	21.29 (3.79)	21.49 (4.05)	17.14 (3.89)	17.89 (4.40)	17.56 (4.19)	103.25 (14.92)	105.43 (19.21)	104.46 (17.45)			

## **Interaction effect of over all occupational stress and its sub variables with groups of service sector and personality dimensions of IAS**

### **Main Effects**

#### **A. Personality dimensions with occupational stress**

Table 5.4.27 gives the result of interaction effect of over all occupational stress and its sub variables with service sectors and personality dimension of IAS. In personality dimensions most of the F-values obtained are highly significant at 0.001 level. Here also the variable responsibility is not found to be significant at any level. Discussions are given along with table 5.4.3.

#### **B. Groups of service sectors with occupational stress**

The results indicate that there are seven significant F-values out of 16. They are quantitative overload, responsibility, promotion, strenuous physical working condition (0.001 level), lack of autonomy, lack of challenges and interpersonal relations (0.01 level). It suggests that the experience and expression of these stress related variables are depends upon the outcomes of their workplace or the service sector that they are working.

The mean values and standard deviations from the table 5.4.28 reveal that, for the variables - quantitative overload, responsibility, strenuous physical working condition the highest mean values obtained for service sector are 18.57; 13.07 and 14.34 respectively which are belong to group I that is in government sector. According to the interview report, it was more clear about nurses who are in government service are more experiencing stress because of quantitative overload, responsibility and strenuous physical working condition. As per the duty rule, each nurse in responsible for managing 10 patients at a time. But in government hospital they have to

manage at least 150 patients in a ward. That it is managed by two or three nurses who are appointed in a ward. And nurses who are doing duty in infectious disease ward, they are taking too much risk because of the unavailability of the preventive measures for them. Due to the shortage and lack of adequate number of staff the duty nurses are compelled to take over responsibility and work overload. Even though, they are not getting any recognition and appreciation from the public as well as from the authority.

And the other significant variables such as lack of autonomy, lack of challenges, interpersonal relations and promotion are scored with the highest mean values in group two that is in private sector. The mean values are 21.26; 21.57; 23.84 and 11.34 respectively. It was learnt that, the nurses who are in private hospitals are suffering with lack of freedom, low level of perceived control and are high in emotional distress and dissatisfaction. And also they report that interpersonal relations are very poor because of their low level of involvement and commitment. And they are not at all having any kind of promotion opportunities, in service courses, other kind of HR development programs etc.

Therefore it can be concluded that the major stressors for nurses in the government hospitals are quantitative overload, responsibility and strenuous physical working condition where as in private hospitals lack of autonomy, lack of challenges, interpersonal relations and promotion are the major stressors.

### **Interaction Effect**

In interaction effect, the results from the table 5.4.27, it is found only six significant values out of 16 interaction effects. The variables are lack of autonomy, lack of control, interpersonal relations, responsibility, promotion and job security. These are all found to be significant at 0.01 level. It

suggests that, these variables are differing significantly with dimensions of personality and the service sector.

The mean values and standard deviations (table 5.4.28) reveal that, the interaction groups such as lack of autonomy, lack of control, interpersonal relations and promotion are in private sector with inertia dimension of personality. The mean values are 22.02; 11.10; 26.84 and 12.68 respectively. Where as in the case of promotion (13.27) and job security (3.20) the mean values are high in government sector with inertia dimension of personality.

Table 5.4.27

**Results of two-way ANOVA of occupational stress and its sub variables with groups of service sectors and personality dimensions of IAS**

Variables	Residual		Main Effects						Interaction		
			Personality types			Service sector					
	Sum of Squares	Mean squares	Sum of squares	Sum of squares	F	Sum of squares	Mean squares	F	Sum of squares	Mean squares	F
Quantitative over load	4228.16	12.74	1293.95	646.97	50.80***	261.74	261.74	20.55**	13.81	6.91	.54
Qualitative overload	3207.52	9.66	189.18	94.59	9.79***	4.68	4.68	.48	.14	.07	.01
Role of ambiguity	1802.39	5.43	494.33	247.16	45.53***	11.01	11.01	2.03	19.74	9.87	1.89
Role conflict	4797.76	14.45	2302.22	1151.11	79.66***	3.60	3.60	.25	44.98	22.49	1.56
Lack of participation	3971.73	11.96	666.37	333.19	27.85***	16.41	16.41	1.37	4.22	2.11	.18
Lack of autonomy	4046.49	12.19	442.60	221.30	18.16***	67.65	67.65	5.56**	86.20	43.10	3.54**
Group pressure	3103.39	9.35	639.76	319.88	34.22***	.001	.001	.00	5.16	2.58	.28
Lack of challenges	4577.33	13.79	1788.09	894.05	64.85***	50.98	50.98	3.69**	18.82	9.41	.68
Lack of control	2037.57	6.14	73.62	36.81	5.99***	7.24	7.24	1.180	57.64	28.82	4.69**
Interpersonal relations	7723.01	23.26	4334.74	2167.37	93.17***	84.33	84.33	3.63**	169.13	84.57	3.64**
Responsibility	1954.11	5.89	5.50	2.75	.47	75.91	75.91	12.89***	50.80	25.40	4.32**
Promotion	2394.02	7.21	834.22	417.11	57.84***	114.81	114.81	15.92***	40.51	20.25	2.81**
Job security	430.41	1.29	95.34	47.67	36.77***	2.39	2.39	1.85	7.14	3.57	2.75**
Alienation	2412.16	7.27	563.31	281.66	38.77***	6.57	6.57	.90	27.15	13.58	1.87
Strenuous physical working condition	3119.89	9.39	1906.24	953.12	101.43***	106.29	106.39	11.32***	9.53	4.76	.51
Over all occupational stress	136982.74	412.59	184905.99	92452.99	224.08***	50.88	50.88	.12	205.87	102.93	.25

\*\*\* Significant at 0.001 level; \*\* Significant at 0.01 level.

Table 5.4.28

**Means and standard deviations of occupational stress and its sub variables with groups of service sectors and personality dimensions of IAS**

Groups Variables	Quantitative overload			Qualitative overload			Role Ambiguity			Role conflict			Lack of participation			Lack of Autonomy		
	1	2	Total	1	2	Total	1	2	Total	1	2	Total	1	2	Total	1	2	Total
Inertia	19.96 (3.33)	17.94 (3.77)	18.87 (3.71)	12.49 (2.96)	12.72 (2.85)	12.62 (2.90)	10.35 (2.23)	11.01 (2.48)	10.70 (2.39)	18.27 (4.19)	18.18 (4.12)	18.22 (4.14)	14.62 (3.44)	14.98 (3.57)	14.81 (3.51)	21.29 (3.59)	22.02 (3.25)	21.67 (3.42)
Activation	15.00 (3.39)	14.07 (3.27)	14.37 (3.32)	10.91 (2.78)	11.22 (3.62)	11.12 (3.35)	8.45 (1.65)	8.51 (2.24)	8.49 (2.06)	12.50 (2.54)	13.13 (2.97)	12.93 (2.83)	11.59 (3.98)	12.51 (3.08)	12.21 (3.40)	19.50 (3.27)	19.31 (3.25)	19.37 (3.23)
Stability	15.79 (4.45)	14.05 (3.09)	15.00 (3.95)	10.83 (3.67)	11.00 (3.69)	10.91 (3.64)	8.04 (2.17)	7.30 (2.83)	7.70 (2.49)	13.17 (3.43)	11.20 (2.55)	12.27 (3.19)	11.25 (3.76)	11.50 (2.56)	11.36 (3.24)	17.63 (5.11)	21.00 (2.68)	19.16 (4.47)
Total	18.57 (4.10)	16.60 (4.02)	17.47 (4.17)	11.99 (3.13)	12.18 (3.21)	12.09 (3.18)	9.70 (2.35)	10.02 (2.83)	9.88 (2.63)	16.61 (4.61)	16.23 (4.61)	16.39 (4.61)	13.63 (3.84)	14.02 (3.61)	13.85 (3.72)	20.45 (4.05)	21.26 (3.37)	20.89 (3.71)
Groups Variables	Group Pressure			Lack of challenges			Lack of control			Interpersonal relations			Responsibility			Promotion		
	Inertia	10.73 (3.82)	10.89 (2.62)	10.82 (3.22)	22.19 (4.09)	23.28 (3.75)	22.78 (3.94)	10.81 (2.11)	11.10 (2.65)	10.97 (2.42)	24.88 (5.55)	26.84 (4.58)	25.94 (5.13)	13.27 (2.88)	11.78 (2.39)	12.46 (2.72)	11.06 (2.87)	12.68 (2.89)
Activation	7.68 (2.83)	7.38 (2.49)	7.48 (2.59)	19.09 (3.22)	18.93 (3.11)	18.99 (3.12)	10.50 (2.94)	9.51 (2.81)	9.84 (2.87)	19.55 (4.25)	18.93 (4.29)	19.13 (4.26)	12.27 (1.96)	12.62 (1.68)	12.51 (1.77)	9.00 (2.29)	8.82 (2.52)	8.88 (2.43)
Stability	8.96 (3.11)	8.50 (2.16)	8.75 (2.70)	16.46 (3.58)	17.00 (3.21)	16.70 (3.39)	9.46 (2.57)	11.50 (1.47)	10.39 (2.35)	18.08 (3.94)	16.40 (4.82)	17.32 (4.39)	12.92 (2.63)	12.90 (1.48)	12.91 (2.17)	7.96 (1.99)	8.70 (1.52)	8.29 (1.81)
Total	10.00 (3.76)	9.79 (2.97)	9.89 (3.34)	20.82 (4.45)	21.57 (4.28)	21.24 (4.37)	10.55 (2.36)	10.76 (2.68)	10.67 (2.54)	23.01 (5.86)	23.84 (6.16)	23.47 (6.04)	13.07 (2.73)	12.10 (2.19)	12.53 (2.49)	10.26 (2.93)	11.34 (3.26)	10.86 (3.16)
Groups Variables	Job Security			Alienation			Strenuous physical working condition			Over all occupational stress								
	Inertia	3.20 (1.05)	3.07 (1.36)	3.13 (1.23)	10.90 (2.89)	10.86 (2.88)	10.88 (2.88)	15.78 (3.31)	14.85 (2.69)	15.27 (3.02)	220.17 (21.70)	221.96 (19.67)	221.14 (20.59)					
Activation	1.95 (.79)	2.16 (1.02)	2.08 (.94)	8.32 (1.39)	8.20 (2.21)	8.24 (1.97)	10.95 (2.99)	9.60 (3.00)	10.04 (3.05)	177.32 (11.18)	175.04 (15.66)	175.79 (14.29)						
Stability	2.25 (1.11)	1.40 (.50)	1.86 (.98)	8.75 (2.75)	7.00 (2.34)	7.95 (2.69)	11.21 (3.27)	9.30 (3.84)	10.34 (3.63)	165.63 (32.39)	165.40 (14.04)	165.52 (25.46)						
Total	2.87 (2.67)	2.67 (1.35)	2.76 (1.26)	10.18 (2.91)	9.81 (3.05)	9.98 (2.99)	14.34 (3.89)	13.00 (3.85)	13.59 (3.92)	205.16 (32.07)	204.71 (30.05)	204.91 (30.92)						

## **Interaction effect of HDI-raw score, HDI-17 score and HDI- melancholia with groups of service sectors and personality dimension of IAS**

### **Main Effects**

#### **A. Personality dimensions with three types of HDI-Scores**

Results from the table 5.4.29 reveal that all the three HDI-scores are differing significantly with personality dimensions. The results are already discussed along with the table 5.4.5.

#### **B. Groups of service sectors with three types of HDI-scores**

The results show that, the calculated F-values are not found to be significant at any level. However the highest mean values for service sectors are found in government hospitals (group I) but which are all not significantly differing with private hospitals.

### **Interaction Effect**

But in interaction effect, there are two significant F-values are obtained, they are HDI-17 scores (0.01) and HDI-melancholia (0.001). It suggests that clinical depression and depression melancholia are differing significantly with personality dimension and the working sector.

The mean and standard deviation (table 5.4.30) of both HDI-17 and HDI melancholia shows that, the highest mean values (19.67 and 16.36) are founded in government sector (group I) with inertia dimension of personality. The nursing profession and their workplace itself is very stressful especially in government hospitals. May be they were not belong to the inertia dimension of personality but by coming into this profession they may subjected to change their personality dimension into this, according to

integrative psychological approach. And experiencing too much of stress and strain both from their workplace and family have a tremendous impact upon their mental health. So the chances for developing emotional and mood disorders are very high.

Table 5.4.29

**Results of two-way ANOVA of HDI-raw score, HDI-17 score and HDI-melancholia with groups of service sectors and personality dimensions of IAS**

Variables	Residual		Main effects						Interaction		
			Personality types			Service sector					
	Sum of squares	Mean squares	Sum of squares	Mean squares	F	Sum of squares	Mean squares	F	Sum of squares	Mean squares	F
HDI - raw score	2087.34	6.29	4849.34	2424.67	385.65***	.55	.55	.09	9.27	4.64	.74
HDI - 17 score	1788.36	5.39	5406.57	2703.29	501.85***	11.38	11.38	2.11	47.52	23.76	4.41**
HDI - melancholia	1298.75	3.91	6309.35	3154.67	806.43***	.08	.08	.02	72.07	36.04	9.21***

\*\*\* Significant at 0.001 level; \*\* Significant at 0.01 level.

Table 5.4.30

**Means and standard deviations of HDI-raw score, HDI-17 score and HDI-melancholia with groups of service sectors and personality dimensions of IAS**

Groups Variables	HDI-raw score			HDI-17 score			HDI-melancholia		
	Inertia	21.59 (1.58)	21.45 (3.03)	21.52 (2.47)	19.07 (1.41)	18.24 (2.16)	18.62 (1.90)	16.36 (1.51)	15.94 (1.85)
Activation	13.39 (2.60)	13.93 (2.58)	13.75 (2.58)	9.57 (3.19)	10.73 (3.39)	10.35 (3.35)	5.72 (1.99)	7.75 (2.84)	7.08 (2.75)
Stability	12.74 (2.54)	13.37 (2.60)	13.04 (2.56)	9.73 (2.61)	9.64 (2.61)	9.69 (2.58)	6.87 (2.49)	6.49 (1.84)	6.69 (2.20)
Total	18.98 (4.39)	18.79 (4.66)	18.88 (4.54)	16.18 (4.78)	15.58 (4.53)	15.82 (4.65)	13.28 (4.98)	12.98 (4.62)	13.11 (4.78)

## **PART F.**

### **Interaction effect of over all multiphasic hostility and its sub variables with groups of age and personality dimensions of IAS**

Two-way ANOVA was performed again to explore the interaction effect of over all multiphasic hostility and its sub variables, over all occupational stress and its sub variables and three types of HDI scores with groups of age. Considering the age range, it is classified into three groups. The sample description is given in the chapter III.

#### **Main Effects**

##### **A. Personality dimension with hostility**

Results from the table 5.4.31, reveals that six variables are showing high significant differences with personality dimension of IAS and it is already discussed.

##### **B. Groups of age with hostility**

The table 5.4.31 results show that the variables guilt and projection hostility are significant at 0.05 level. It suggests that, in our social expectation the grown up individuals are supposed to be more mature with their increasing age. But not considering this, if they are doing something wrong knowingly or unknowingly they may experience more guilt feeling. And also they have a tendency to read others (or other event) are the causal factors of their own unluck, angry and hostility etc.

An overall look into the mean and standard deviations from the table 5.4.32, it is found that, the highest total mean for guilt is observed in group II (14.47) that is the nurses whose age ranges between 26 to 34 years. The similar trend is followed in the case of projection hostility (18.19) also.

Hence it can be concluded that, the feeling of guilt and projection hostility are more experienced by the nurses who are belong to the above said age group.

### **Interaction Effect**

The results indicate that there are only three variables showing significant (0.01 level) interaction effect between personality dimensions with age groups. The significant variables are self criticism, guilt and criticizing others. The variables self criticism and criticizing others are not found to be significant in the case of age group versus hostility, but in the interaction effect it is found to be significant. It indicates that both personality dimension and age has a major role to predict the feelings and experience of these emotions and which is differing with personality and the age.

Considering the mean and standard deviation from the (table 5.4.32) results reveal that in self criticism and criticizing others, the highest mean scores, 17.36 and 22.65 are of group II with inertia dimension of personality. Where as, in the case of variable guilt, the highest mean (15.96) is observed in group II with activation dimension of personality. Let it conclude that as the age increases self criticism and criticizing others are also increasing with inertia dimension of personality and guilt is increasing with activation dimension of personality.

Table 5.4.31

**Results of two-way ANOVA of over all multiphasic hostility and its sub variables with groups of age and personality dimensions of IAS**

Variables	Residual		Main Effects						Interaction		
			Personality type			Age					
	Sum of squares	Mean squares	Sum of squares	Mean squares	F	Sum of squares	Mean squares	F	Sum of squares	Men squares	F
Self criticism	3132.17	9.52	219.87	109.94	11.55***	1.94	.97	.10	120.69	30.17	3.17**
Guilt	2794.69	8.49	19.88	9.94	1.17	53.31	26.66	3.14*	166.54	41.63	4.90**
Cynicism	8370.71	25.44	723.22	361.61	14.21***	51.19	25.60	1.01	108.12	27.03	1.06
Acting out	7033.44	21.38	384.78	192.39	8.99***	38.21	19.10	.89	101.52	25.38	1.19
Criticizing others	4936.87	15.01	313.19	156.59	10.44***	49.88	24.94	1.66	221.31	55.33	3.69**
Projection hostility	5130.93	15.59	636.87	318.44	20.42***	136.42	68.21	4.37*	33.68	8.42	.54
Over all muliphasic hostility	90764.46	275.88	9556.43	4778.22	17.32***	875.16	437.58	1.59	1292.95	323.24	1.17

\*\*\* Significant at 0.001 level; \*\* Significant at 0.01 level; \* Significant at 0.05 level.

Table 5.4.32

**Means and standard deviations of over all multiphasic hostility and its sub variables with age groups and personality dimensions of IAS**

Groups Variables	Self criticism				Guilt				Cynicism			
	I	II	III	Total	I	II	III	Total	I	II	III	Total
Inertia	16.93 (3.05)	17.36 (3.88)	16.37 (2.95)	16.98 (3.41)	14.00 (2.73)	14.38 (2.83)	13.45 (2.58)	14.04 (2.75)	19.85 (6.03)	20.08 (5.28)	19.25 (4.55)	19.82 (5.39)
Activation	14.45 (2.18)	14.74 (1.81)	16.91 (2.30)	14.96 (2.23)	13.12 (3.07)	15.96 (3.59)	14.91 (1.45)	14.39 (3.30)	17.61 (3.62)	18.30 (5.03)	17.27 (3.85)	17.79 (4.15)
Stability	17.13 (2.67)	15.00 (2.19)	16.20 (2.86)	16.00 (2.63)	15.27 (1.75)	13.11 (3.78)	11.80 (4.78)	13.55 (3.69)	18.00 (4.39)	14.95 (4.62)	13.80 (1.81)	15.73 (4.34)
Total	16.32 (3.00)	16.59 (3.59)	16.43 (2.82)	16.45 (3.21)	13.92 (2.78)	14.47 (3.19)	13.44 (2.93)	14.04 (3.00)	19.06 (5.40)	19.07 (5.42)	18.19 (4.56)	18.88 (5.24)
Groups Variables	Acting out				Criticizing others				Projection hostility			
Inertia	17.64 (5.02)	16.92 (5.08)	17.24 (4.15)	17.25 (4.85)	22.27 (3.40)	22.65 (3.96)	21.12 (4.38)	22.17 (3.89)	18.41 (4.39)	19.26 (4.80)	17.29 (4.28)	18.52 (4.59)
Activation	14.94 (4.46)	15.65 (2.96)	16.09 (5.49)	15.37 (4.16)	19.06 (2.88)	21.52 (3.14)	20.73 (5.71)	20.18 (3.68)	15.91 (1.62)	15.26 (2.24)	15.18 (3.12)	15.57 (2.13)
Stability	14.73 (3.59)	13.05 (3.86)	17.00 (4.16)	14.52 (4.06)	18.93 (2.63)	19.26 (5.49)	22.08 (4.02)	19.95 (4.55)	15.67 (1.54)	16.42 (1.95)	14.20 (3.55)	15.66 (2.40)
Total	16.61 (4.84)	16.17 (4.79)	17.03 (4.32)	16.52 (4.74)	21.06 (3.55)	21.99 (4.22)	21.29 (4.49)	21.49 (4.05)	17.45 (3.81)	18.19 (4.46)	16.54 (4.16)	17.56 (4.19)

Groups Variables	Overall multiphasic hostility											
Inertia	107.52 (19.28)	110.57 (18.00)	104.61 (15.39)	108.14 (18.01)								
Activation	95.39 (11.46)	101.04 (12.22)	100.73 (15.59)	98.21 (12.58)								
Stability	99.27 (9.68)	92.37 (19.41)	93.60 (8.79)	95.00 (14.64)								
Total	103.46 (17.45)	106.45 (18.51)	102.49 (15.03)	104.46 (17.45)								

## **Interaction effect of over all occupational stress and its sub variables with groups of age and personality dimensions of IAS**

### **Main Effects**

#### **A. Personality dimension with occupational stress**

The results from the table 5.4.33 show that, among the total of 16 variables only one variable is not significant at any level. All others are highly significant at 0.001 level. The same result is already discussed before.

#### **B. Groups of age with occupational stress**

It is found that, there are seven significant differences which are qualitative over load, strenuous physical working condition, over all occupational stress (0.05 level), role conflict, group pressure, responsibility (0.01 level) and alienation (0.001 level). The results reveal that age is also a determinant factor for the experience of these stressors. The variable responsibility was not significant in the above analysis but here it is significant

An observation into the mean and standard deviation (table 5.4.34) it is seen that, the highest mean values are found for group III of the variables role conflict, group pressure, responsibility, alienation, strenuous physical working condition and in over all occupational stress. The mean values are as 17.72, 10.63, 13.03, 11.24, 14.46 and 211.48 as respectively. It realizes that the nurses who are belong to the age group of 35-55 years are more experiencing these stressors. Where as the variable qualitative overload, the highest mean score is found in group I that is, their age ranges between 22-25. They may feel that their assigned duties and works are qualitatively very high. Hence it is concluded that, role conflict, group pressure, responsibility, alienation, strenuous physical working condition and over all occupational stress are

more experienced by nurses who are in the age group of 35-55 years but qualitative overload is high among the nurses of 22-25 years of age.

### **Interaction Effect**

The results of interaction effect (table 5.4.33) reveals that there are five significant differences with the variables of lack of participation, interpersonal relations, overall occupational stress (0.05 level), lack of control (0.01 level), and the variable strenuous physical working condition (0.001 level). The results indicate that the experience of these stressors are depends upon the personality dimension and age.

The mean and standard deviation suggests that (table 5.4.34) the highest mean for lack of participation (14.86) is found to be in group III of inertia dimension of personality. The same trend is followed in the case of strenuous physical working condition (15.67) and over all occupational stress (224.53). Where as the variables lack of control and interpersonal relations the highest mean scores (11.36 and 26.55) are found to be in group I and group II as respectively with inertia dimension of personality.

However, it can be concluded that nurses of inertia dimension of personality with group III of age between 35-55 years are more experiencing lack of participation, strenuous physical working condition and over all occupational stress. Similarly whose age ranges between 22-25 years are more experiencing lack of control and who's age ranges between 26-34 years are more in interpersonal relations.

Table 5.4.33

**Results of two-way ANOVA of over all occupational stress and its sub variables with groups of age and personality dimensions of IAS**

Variables	Residual		Main Effects						Interaction		
			Personality type			Age					
	Sum of squares	Mean squares	Sum of squares	Mean squares	F	Sum of squares	Mean squares	F	Sum of squares	Men squares	F
Quantitative overload	4407.79	13.39	1325.64	662.82	49.47***	13.35	6.68	.49	82.56	20.64	1.54
Qualitative overload	3114.96	9.47	196.00	98.00	10.35***	61.15	30.58	3.23*	36.22	9.06	.96
Role Ambiguity	1803.24	5.48	500.09	250.04	45.62***	15.68	7.84	1.43	14.22	3.55	.65
Role conflict	4644.94	14.12	2274.92	1137.46	80.57***	125.20	62.60	4.43**	76.21	19.05	1.35
Back of participation	3885.89	11.81	665.29	332.65	28.16***	3.23	1.62	.14	103.25	25.81	2.19*
Lack of Autonomy	4125.21	12.54	415.80	207.90	16.58***	24.46	12.23	.98	50.68	12.67	1.01
Group pressure	2998.58	9.11	649.85	324.93	35.65***	78.46	39.23	4.30**	31.53	7.88	.87
Lack of challenges	4568.19	13.89	1798.30	899.15	64.76***	53.75	26.88	1.94	25.18	6.29	.45

Lack of control	1981.31	6.02	80.39	40.19	6.68***	41.11	20.55	3.41	80.02	20.00	3.32**
Inter-personal Relations	7964.41	23.39	4321.63	2160.82	92.39***	14.40	7.20	.31	267.66	66.92	2.86*
Responsibility	2029.39	6.17	7.26	3.63	.59	30.48	15.24	2.47**	20.94	5.24	.85
Promotion	2484.69	7.55	822.01	411.00	54.42***	7.27	3.63	.48	57.38	14.35	1.89
Job security	433.39	1.32	95.19	47.59	36.13***	1.95	.98	.74	4.59	1.15	.87
Alienation	2270.87	6.90	530.08	265.04	38.39***	163.27	81.64	11.83***	11.73	2.93	.43
Strenuous Physical working condition	2943.71	8.95	1898.39	949.19	106.09***	49.60	24.80	2.77**	242.51	60.63	6.78***
Over all occupational stress	130547.63	396.80	183899.49	91949.74	231.73***	3002.18	1501.09	3.78*	3689.73	922.43	2.33*

\*\*\* Significant at 0.001 level; \*\* Significant at 0.01 level; \* Significant at 0.05 level.

Table 5.4.34

**Means and standard deviation of over all occupational stress and its sub variables with age groups and personality dimensions of IAS**

Groups Variables	Quantitative overload				Qualitative overload				Role ambiguity				Role conflict				Lack of participation			
	I	II	III	Total	I	II	III	Total	I	II	III	Total	I	II	III	Total	I	II	III	Total
Inertia	18.31 (3.15)	19.20 (3.93)	19.14 (4.06)	18.87 (3.71)	12.78 (2.86)	12.21 (2.87)	13.12 (2.97)	12.62 (2.90)	11.00 (2.32)	10.48 (2.45)	10.65 (2.37)	10.70 (2.39)	17.75 (4.01)	18.03 (4.41)	19.31 (3.71)	18.22 (4.14)	14.75 (3.55)	14.83 (3.41)	14.86 (3.68)	14.81 (3.50)
Activation	14.91 (3.88)	13.13 (2.44)	15.36 (2.42)	14.37 (3.32)	11.69 (3.23)	10.35 (3.86)	11.00 (2.32)	11.12 (3.35)	8.56 (2.08)	8.35 (2.40)	8.55 (1.13)	8.49 (2.06)	13.55 (2.64)	11.22 (2.74)	14.64 (1.63)	12.92 (2.83)	11.88 (2.33)	12.78 (4.99)	12.00 (1.73)	12.21 (3.40)
Stability	15.00 (3.51)	15.11 (4.27)	14.80 (4.34)	15.00 (3.95)	12.27 (3.06)	10.21 (4.13)	10.20 (3.16)	10.91 (3.64)	8.27 (2.98)	7.84 (2.52)	6.60 (1.08)	7.70 (2.49)	12.20 (2.18)	11.95 (4.05)	13.00 (2.75)	12.27 (3.19)	13.40 (2.72)	10.26 (3.16)	10.40 (2.88)	11.36 (3.24)
Total	17.05 (3.74)	17.61 (4.48)	17.96 (4.28)	17.47 (4.17)	12.44 (2.99)	11.62 (3.34)	12.39 (3.09)	12.09 (3.18)	10.06 (2.63)	9.76 (2.67)	9.76 (2.67)	9.88 (2.63)	16.03 (4.19)	16.04 (5.08)	17.72 (4.18)	16.39 (4.61)	13.86 (3.40)	13.85 (4.01)	13.81 (3.74)	13.85 (3.72)
Groups Variables	Lack of autonomy				Group Pressure				Lack of Challenges				Lack of Control				Interpersonal relations			
	I	II	III	Total	I	II	III	Total	I	II	III	Total	I	II	III	Total	I	II	III	Total
Inertia	21.19 (3.11)	21.79 (3.07)	22.29 (4.36)	21.69 (3.42)	11.09 (2.22)	10.32 (3.47)	11.31 (3.95)	10.82 (3.22)	23.01 (93.34)	22.52 (4.14)	22.90 (4.47)	22.78 (3.94)	11.36 (2.31)	10.85 (2.60)	10.57 (2.16)	10.97 (2.42)	25.73 (4.07)	26.55 (4.84)	25.14 (6.86)	25.94 (5.13)
Activation	19.91 (3.06)	18.83 (3.13)	18.91 (3.96)	19.37 (3.24)	7.33 (2.42)	6.91 (2.68)	9.09 (2.51)	7.48 (2.59)	19.48 (3.49)	17.91 (2.61)	19.73 (2.49)	18.98 (3.12)	9.79 (2.56)	9.52 (3.30)	10.64 (2.44)	9.84 (2.87)	20.06 (3.77)	17.00 (4.27)	20.82 (4.19)	19.13 (4.26)
Stability	18.33 (3.18)	19.47 (4.69)	19.80 (5.83)	19.16 (4.47)	9.80 (3.34)	7.89 (2.51)	8.80 (1.23)	8.75 (2.70)	17.67 (3.03)	15.89 (4.16)	16.80 (1.68)	16.70 (3.39)	11.87 (1.77)	10.47 (1.89)	8.00 (2.11)	10.39 (2.35)	18.53 (4.22)	16.21 (5.01)	17.60 (3.03)	17.31 (4.39)
Total	20.52 (3.23)	20.97 (3.54)	21.43 (4.66)	20.89 (3.71)	9.98 (2.89)	9.41 (3.50)	10.63 (3.64)	9.89 (3.34)	21.49 (3.90)	20.82 (4.69)	21.56 (4.50)	21.24 (4.3)	11.02 (2.42)	10.58 (2.68)	10.22 (2.42)	10.67 (2.54)	23.44 (4.99)	23.51 (6.59)	23.43 (6.68)	23.47 (6.04)

Groups Variables	Responsibility				Promotion				Job security				Alienation				Strenuous physical working condition					
	Inertia	12.12 (2.50)	12.38 (2.57)	13.16 (3.20)	12.46 (2.72)	12.16 (2.62)	12.09 (2.79)	11.29 (3.75)	11.94 (2.99)	3.01 (1.35)	3.26 (1.10)	3.06 (1.24)	3.13 (1.23)	10.22 (2.58)	10.77 (2.61)	12.14 (3.44)	10.88 (2.88)	14.78 (2.54)	15.47 (3.23)	15.67 (3.24)	15.27 (3.02)	
Activation	12.21 (1.91)	13.13 (1.42)	12.09 (1.76)	12.51 (1.77)	8.69 (1.57)	8.69 (3.58)	9.82 (1.25)	8.88 (2.43)	2.27 (0.98)	1.91 (1.08)	1.91 (0.30)	2.09 (0.95)	7.64 (2.06)	8.61 (1.85)	9.27 (1.35)	8.24 (1.97)	10.61 (3.20)	8.00 (2.00)	12.64 (1.28)	10.64 (3.05)		
Stability	12.73 (1.94)	12.79 (1.13)	13.40 (3.69)	12.90 (2.17)	8.93 (0.96)	7.42 (2.24)	9.00 (1.15)	8.29 (1.81)	1.67 (0.48)	2.05 (1.31)	1.80 (0.79)	1.86 (0.98)	6.80 (2.54)	8.42 (2.83)	8.80 (2.25)	7.95 (2.69)	8.67 (2.89)	11.74 (4.32)	10.20 (1.93)	10.34 (3.63)		
Total	12.21 (2.29)	12.56 (2.27)	13.03 (3.09)	12.53 (2.49)	10.89 (2.78)	10.88 (3.41)	10.75 (3.33)	10.86 (3.16)	2.67 (1.28)	2.87 (1.27)	2.71 (1.21)	2.76 (1.26)	9.16 (2.81)	10.08 (2.72)	11.24 (2.35)	9.98 (2.99)	13.00 (3.63)	13.70 (4.31)	14.46 (3.50)	13.59 (3.92)		
Groups Variables	Over all occupational stress																					
	Inertia	219.38 (17.65)	220.82 (20.27)	224.53 (25.09)	221.14 (20.59)																	
Activation	178.61 (11.93)	167.00 (15.49)	185.73 (7.25)	175.79 (14.29)																		
Stability	171.73 (15.55)	156.53 (32.67)	173.30 (16.85)	165.52 (25.46)																		
Total	203.41 (26.35)	202.87 (34.74)	211.48 (30.29)	204.91 (30.92)																		

## **Interaction effect of three types of HDI-scores with groups of age and personality dimensions of IAS**

### **Main effects**

#### **A. Personality with three types of HDI scores**

From the table 5.4.35 results show that all the three HDI scores are highly significantly differing with personality dimensions of IAS. The same was already discussed.

#### **B. Groups of age with three types of HDI scores**

There are two 'F' values are differing significantly at 0.05 level which are HDI-17 and HDI melancholia. It suggests that age is the one determinant factor of experiencing clinical depression and the severity of depression.

Mean and standard deviation from the table 5.4.36 show that the highest mean scores are observed in group III of both HDI-17 score and HDI melancholia. The obtained mean scores are 16.56 and 13.61 as respectively. So in conclusion nurses who are in the age between 35-55 years are more susceptible to develop clinical depression and severity of depression.

### **Interaction effect**

The table (5.4.35) results indicate that all the three HDI variables are statistically significant at 0.05 level. HDI-raw score and HDI-17 score are significant at 0.05 level and the variable HDI-melancholia is highly significant at 0.001 level. The results suggest that, personality dimension and age has a significant role in developing depressive symptomatology, clinical depression and severity of depression.

The calculated mean and standard deviation (table 5.4.36) reveal that the highest mean values are observed in group III of inertia dimension of

personality. The obtained mean values are 21.81 for HDI-raw score, 19.32 for HDI-17 score and 16.73 for HDI-melancholia. Hence it can be concluded that nurses of the age between 35-55 years with inertia dimension of personality are more susceptible to develop depressive symptomatology, clinical depression and severity of depression.

Table 5.4.35

**Results of two-way ANOVA of HDI-raw score, HDI-17 score and HDI melancholia with age groups and personality dimensions of IAS**

Variables	Residual		Main Effects						Interaction		
			Personality types			Age					
	Sum of squares	Mean squares	Sum of squares	Mean squares	F	Sum of squares	Mean squares	F	Sum of squares	Mean squares	F
HDI - raw score	2014.63	6.12	4784.59	2392.29	390.67***	21.85	10.93	1.78	60.67	15.17	2.48*
HDI - 17 score	1761.47	5.35	5352.59	2676.24	499.87***	28.86	14.43	2.69*	56.92	14.23	2.66*
HDI-melancholia	1265.73	3.85	6235.19	3117.59	810.36***	19.67	9.83	2.56*	85.51	21.38	5.56***

\*\*\* Significant at 0.001 level; \*\* Significant at 0.01 level; \* Significant at 0.05 level.

Table 5.4.36

**Mean and standard deviations of HDI-raw score, HDI-17 score and HDI melancholia with age groups and Personality dimensions of IAS**

Groups Variables	HDI raw score				HDI-17 score				HDI - melancholia			
	I	II	III	Total	I	II	III	Total	I	II	III	Total
Inertia	21.47 (3.36)	21.41 (2.01)	21.81 (1.29)	21.52 (2.47)	18.23 (2.00)	18.57 (2.00)	19.32 (1.28)	18.61 (1.90)	15.80 (1.69)	16.09 (1.76)	16.73 (1.51)	16.13 (1.71)
Activation	13.01 (2.91)	14.48 (1.67)	14.45 (2.69)	13.75 (2.58)	10.32 (3.24)	10.08 (3.86)	11.00 (2.70)	10.35 (3.35)	7.13 (2.27)	7.18 (2.51)	6.69 (1.25)	7.08 (2.75)
Stability	12.19 (2.53)	14.14 (2.61)	12.17 (1.77)	13.03 (2.56)	9.05 (2.73)	10.79 (2.27)	8.57 (2.28)	9.69 (2.58)	5.73 (2.06)	8.19 (1.71)	5.31 (1.52)	6.69 (2.20)
Total	18.22 (5.27)	19.24 (3.86)	19.34 (4.23)	18.88 (4.54)	15.14 (4.73)	16.06 (4.49)	16.56 (4.70)	15.82 (4.65)	12.41 (4.96)	13.50 (4.34)	13.61 (5.12)	13.11 (4.77)

## **PART G.**

### **Interaction effect of three types of HDI-scores with groups of hostility and personality dimension of IAS**

#### **Main effects**

##### **A. Personality with three types of HDI scores.**

Here also it is seen that all the HDI scores are highly significantly differing with personality dimensions of IAS. (See table 5.4.37). And it is already discussed.

##### **B. Groups of hostility with three types of HDI.**

From the results (table 5.4.37) it is observed that, the calculated 'F' vales are statistically not significant at any level. It suggests that, the high, low and moderate level of hostility is not playing significant role to the development of depressive symptomatology, clinical depression and severity of depression.

#### **Interaction Effect**

The results indicate that, HDI-raw score and HDI melancholia are highly significant at 0.001 level where as the variable HDI-17 score is significantly differing at 0.01 level. It reveals that, there is interaction effect between personality dimensions and groups of hostility in predicting depressive symptomatology, clinical depression and severity of depression.

An observation into the mean and standard deviation (table 5.4.38) indicate that, the highest mean value for HDI-raw score 21.87, is found in inertia personality dimension with group III of hostility, that is in high hostile group (the scores between 113.19 to above). The same trend is observed in

the case of HDI-17 score and in HDI melancholia. The highest mean values are 18.95 and 16.29 as respectively.

Hence the results are concluded that nurses of inertia dimension of personality with high hostility are more susceptible to develop depressive symptomatology, clinical depression and severity of depression.

Table 5.4.37

**Results of two-way ANOVA of HDI-raw score, HDI-17score and HDI melancholia with groups of hostility and personality dimensions of IAS**

Variables	Residual		Main Effects						Interaction		
	Sum of squares	Mean squares	Personality types			Hostility groups			Sum of squares	Mean squares	F
			Sum of squares	Mean squares	F	Sum of squares	Mean squares	F			
HDI-raw score	1905.31	5.79	4215.19	2107.59	363.93***	12.78	6.39	1.10	179.07	44.77	7.33***
HDI-17 score	1756.72	5.34	4825.38	2412.69	451.85***	16.22	8.11	1.52	74.31	18.59	3.48**
HDI-melancholia	1270.09	3.86	5690.54	2845.29	737.04***	3.25	1.63	.42	97.57	24.39	6.32***

\*\*\* Significant at 0.001 level; \*\* Significant at 0.01 level.

Table 5.4.38

**Mean and standard deviations of HDI-raw score, HDI-17 score and HDI melancholia  
with groups of hostility and personality dimensions of IAS**

Groups Variables	HDI-raw score				HDI-17 score				HDI-melancholia			
	I	II	III	Total	I	II	III	Total	I	II	III	Total
Inertia	20.68 (3.21)	21.67 (1.6)	21.87 (2.64)	21.52 (2.47)	18.02 (2.86)	18.90 (1.38)	18.95 (1.51)	18.61 (1.90)	15.57 (2.78)	16.09 (1.18)	16.29 (1.25)	16.13 (1.71)
Activation	13.42 (2.04)	14.46 (2.57)	12.89 (3.74)	13.75 (2.58)	10.32 (3.56)	10.77 (2.62)	9.25 (4.48)	10.35 (3.35)	8.10 (2.41)	6.05 (2.00)	6.44 (4.39)	7.08 (2.75)
Stability	14.01 (1.56)	12.57 (2.72)	8.20 (.92)	13.03 (2.56)	9.69 (2.58)	10.27 (2.29)	9.50 (2.87)	6.55 (.17)	7.06 (2.06)	6.51 (2.58)	5.00 (.58)	6.69 (2.20)
Total	16.96 (4.36)	19.36 (4.13)	20.41 (4.59)	18.88 (4.54)	13.91 (4.86)	16.38 (4.235)	17.22 (4.11)	15.81 (4.65)	11.35 (4.71)	13.33 (4.86)	14.86 (3.99)	13.11 (4.78)

SECTION V

*Interaction effect of personality, hostility  
and occupational stress on 3 types of HDI-scores*

A three-way ANOVA was planned for analyzing the interaction effect between the variables of personality dimensions, over-all multiphasic hostility and over all occupational stress groups on three types of HDI scores. For the particular analysis over all multiphasic hostility and over all occupational stress are grouped into two. Median was calculated as the cut off point for breaking into two. The sample break up is given in the chapter III.

A preliminary analysis of cell distribution was performed for checking whether there are any missing values. But it was found that the results obtained are in trouble with cell distribution. In inertia dimension of personality (table 5.5.1) each cell is distributed with adequate number of participants. Where as in the case of activation dimension (table 5.5.2) there are no participants with high hostility group among from the total of activation personalities. So the one cell is absent with the participants. The same trend is observed in stability dimension also (table 5.5.3). Here it is absent with the participants of high stress group. It is not the problem with sampling. And there is no need to become all the participants into the unidimensional personality and also there are variations in the experience of the studied variables. Hence the planned analysis was not being performed.

Further, the investigator was planned to frame additional hypotheses by splitting each study variable with 3 types of HDI-scores. So the first hypothesis was 'there will be significant difference between personality dimensions and 3 types of HDI-scores'. But it could understand that, it is already tested along with the hypotheses of interaction effect. And the results

are elaborately discussed with the interaction effect with the variable years of service. And the second hypothesis was planned to study 'there will be significant difference between groups of hostility and 3 types of HDI-scores'. It is also learnt that, the same was tested and proved already before along with the hypothesis of interaction effect (Section IV, part G)

However, the cell distribution indicates that, there is difference between inertia and stability dimension of personality. The results suggest that, the nurses of inertia dimension of personality with occupational stress (n = 105) are more affected with depressive symptomatology. Where as in stability dimension, there are no participants with high occupational stress.

Table 5.5.1

**Show the cell distribution of groups of occupational stress with inertia dimension of personality**

Variables		Groups of over all occupational stress	
		1	2
Groups of over all multiphasic hostility	1	35	59
	2	28	105

Table5.5.2

**Show the cell distribution of groups of occupational stress with activation dimension of personality**

Variables		Groups of over all occupational stress	
		1	2
Groups of over all multiphasic hostility	1	45	
	2	21	1

Table 5.5.3

**Show the cell distribution of groups of occupational stress with stability dimension of personality**

Variables		Groups of over all occupational stress	
		1	2
Groups of over all multiphasic hostility	1	34	1
	2	9	

SECTION VI

*Comparison between groups of  
occupational stress and 3 types of HDI- scores*

For substantiating the above said findings, the investigator framed one more additional hypothesis for testing whether there is any significant difference between low and high stress groups on three types of HDI-scores. 't' test analysis was done for testing the hypothesis. From the table 5.6.1, the obtained 't' values for HDI raw score, HDI-17 score and HDI melancholia are highly significantly differing with 0.001 level.

In HDI raw score the comparison between low and high stress group, the mean value of low stress group is 16.03 and in high stress group it is 21.75 and the calculated 't' value is showing high significant difference between low and high stress group. The results reveal that, the high occupational stress group is more susceptible to depressive symptomatology.

The same trend is observed in HDI-17 score and HDI melancholia also. The mean difference is found for both variables in both stress groups. The mean scores for low and high stress group are 12.90, 18.76; 9.94, 16.32 as respectively with HDI-17 score and melancholia. And the 't' values obtained are 14.99 and 16.54 are highly significantly differing. It realizes that nurses with high occupational stress are more prone to develop depressive symptomatology, clinical depression and severity of depression. The results are supported with the theory by Mathew (1999). Stability is characterized with stress tolerant and freedom from maladjustment tendencies. Where as inertia dimension of personalities are characterized with proneness to develop maladjustment under stress.

Kessler and Colleagues found that severity of depression often accompanied by anxiety symptoms may be manifested as "stress-related" symptoms, such as irritability, burnout, fatigue boredom and poor work performance. The World Health Organization has recognized workplace stress as a world wide epidemic and it has the high prevalence of depression and other mental illnesses. The interview report suggest that, they are more stressed because of the time pressure, role conflict, role ambiguity, lack of adequate staff, lack of support etc.

Hence it is concluded that nurses who are having high occupational stress are more prone to develop workplace depression.

Table 5.6.1

**Show the means, standard deviations and 't' values of three types of HDI-scores**

Variables	Group I (Low stress) N=170		Group II (High stress) N=168		't' value
	Means	S.Ds	Means	S.Ds	
HDI-raw score	16.03	4.41	21.75	2.32	14.96***
HDI-17 score	12.90	4.77	18.76	1.78	14.99***
HDI melancholia	9.94	4.73	16.32	1.68	16.54***

\*\*\* Significant at 0.001 level

# SUMMARY AND CONCLUSION

Biji Mathew “Workplace depression: An analytical study” Thesis. Department of Psychology , University of Calicut, 2007

## *Summary and Conclusion*

- ❖ *Resume of the study*
- ❖ *Objectives of the study*
- ❖ *Tenability of the hypotheses*
- ❖ *Major findings of the study*
- ❖ *Implications of the study*
- ❖ *Limitations of the study*

## **Resume of the Study**

Depression is among the most debilitating health problems worldwide. It is no surprise that depression has a significant prevalence in the workplace and a significant impact on vocational functioning. If one assumes that depression in the workplace is common and that it is associated with impaired work performance as well as more days of disability, then an important question is whether identifying and treating workers who suffer from depression is good financial investment. Untreated depression may seriously affect the ability to work effectively. Most people will try to continue to work, knowing that, they are not doing their job as well as they used to, this can also make them feel guilty or more depressed.

The workplace is an important setting for early detection because the symptoms of depression often appear quite vividly in a context where the undiagnosed employee is called upon to interact with others and may fail to do so effectively or productively. The employee may function poorly at work, will be absent a lot, late for meetings and duty, develop relationship problems, start drinking heavily and generally undergo a performance decline. Symptoms of workplace depression include more days off work than allowed through disability plans, loss of concentration, reduced productivity, loss of interest in work, withdrawing from colleagues, irritability, excessive tardiness, high absenteeism etc.

Personality is what characterizes individual. It includes the unique physiological qualities that influence a variety of characteristic behavior patterns, both overt and covert, across different situations and overtime (Zimbardo, 1985). The traditional Indian beliefs, a man is determined not so much by his actions as by his birth, his stars and his guans or qualities. This attitude, on one hand makes him less subjective about his personality and allows for detached observation, while on the other hand inculcates fatalism, a fertile ground for breeding depression.

According to ancient Indian texts, depression can be two types: "inner" and "outer". The inner depression is caused by the conflict between the chitta (conscience) and brain. When a person does something wrong, he might not accept it consciously but his conscience would always be guilt ridden. This ultimately, would result in depression and frustration.

Sadhana Vohra, a psychologist, reported that by nature women might not be prone to depression, but the society and life situations make them so. Depression in most Indian women seems to be a result of their inability to cope with unreasonable expectations of their family and society.

Hostility is a psychological contributor to negative health outcomes. Suarez and Williams (1989) suggest that, one may speculate that hostile persons perceive many social situations in a negative light, produce feelings of hostility and develop exaggerated physiological and psychological responses. Depression and hostility were significantly related to a variety of negative health outcomes in an extensive reanalysis of data from a large number of studies (Booth and Friedman, 1987). Hostile elements in depression have been widely accepted as an explanation for suicide as well. The depressed person may become hostile in response to others.

Much employee depression comes from the stress they experience on the job. This stress can be good or bad, and by itself it may not meaningfully change normal behavior. Occupational stress is defined as the deviation from the response that an employee would normally make in a given situation. Constable and Russell (1986) and Ilfeld (1976) found that stress was conceptualized to consist of four psychiatric conditions such as depression, anxiety, cognitive disturbance and anger.

Depression may start at any age; the average age of onset of depression is in the early to mid 20's. This is the time when people are gainfully employed and should be the most productive. Depression is not only distressing for the person but also affects their work by making them less productive while at work and producing sick leave, accidents and staff turnover. Depression is the number one barrier women face in the workplace.

Early detection is vital, and effective treatment may significantly reduce the severity, duration and recurrence of depression. Similarly improvements in workplace conditions, identification of depression symptoms and availability of effective treatments may prevent additional hardship to the organization and the individual.

Specific impacts of depression on the workplace have to be a significant factor of job performance. Though the present investigation entitled "workplace depression: An analytical study" is socially very relevant in the present scenario. The variables under study are: inertia, activation, stability (IAS) personality dimensions; multiphasic hostility, occupational stress and depression.

The study was conducted among 338 female nurses who are working on full time basis either in both government or in private hospitals of four different districts of Kerala state. They were studied by using IAS Rating

(Mathew, 1995); Multiphasic hostility inventory (Jayan, Baby Shari and Biji, 2005); Occupational stress inventory (Joseph, Jayan and Dharmangadan, 2004) and Hamilton depression inventory (Hamilton, 1967). And unstructured interview was also used for collecting some information regarding their personal and occupational factors.

### **Major Objectives**

1. To explore the personality dimensions, multiphasic hostility, occupational stress and workplace depression of nurses.
2. To study the nature and extent of relationship among dimensions of personality, multiphasic hostility and its sub variables, occupational stress and its sub variables and depression.
3. To identify those variables which can predicts occupational stress.
4. To identify those variables which predicts depression (depression symptomatology, clinical depression and severity of depression)
5. To examine the interaction effect of personality and job related demographic variables with multiphasic hostility, occupational stress and depression.
6. To examine the interaction effect of personality and hostility with occupational stress
7. To examine the interaction effect of personality and hostility with depression.
8. To examine the interaction effect of personality and occupational stress with depression.

## **Tenability of the Hypotheses**

### **1. Restatement of the hypothesis**

*There will be significant relation among the dimensions of personality, multiphasic hostility and its sub variables; occupational stress and its sub variables; and depression (depressive symptomatology, clinical depression and melancholia).*

Correlation was done for testing the hypothesis. And it was found that, there are relationships between IAS personality dimensions, multiphasic hostility and its sub variables occupational stress and its sub variables and between three types of HDI-scores. Also it is observed that there are inter-correlations between almost all the variables. Hence the hypothesis is accepted.

### **2. Restatement of the hypothesis**

*Occupational stress can be predicted by means of personality dimensions of IAS and variables of multiphasic hostility.*

For testing the hypothesis, step wise regression analysis was performed and it was found that the variables inertia, projection hostility, cynicism and criticizing others are predicting occupational stress. Hence the hypothesis two is accepted.

### **3. Restatement of the hypothesis**

*HDI – raw score (Depressive symptomatology) can be predicted by means of personality dimensions of IAS and variables of multiphasic hostility and occupational stress.*

Step wise regression analysis was performed for checking the hypothesis. Depressive symptomatology is predicted by the variables of

inertia, alienation, group pressure, lack of autonomy and promotion. So the hypothesis is also accepted.

#### **4. Restatement of the hypothesis**

*HDI – 17 score (clinical depression) can be predicted by means of personality dimensions of IAS and variables of multiphasic hostility and occupational stress.*

The hypothesis was tested by using step wise regression analysis and found that inertia, guilt, alienation, group pressure, strenuous physical working condition, promotion and job security are the predictor variables of clinical depression. So the hypothesis is accepted.

#### **5. Restatement of the hypothesis**

*HDI-melancholia (severity of depression) can be predicted by means of personality dimensions of IAS and variables of multiphasic hostility and occupational stress.*

Here also the step wise regression analysis was performed for testing the hypothesis and it was observed that inertia, role conflict, alienation, lack of participation, group pressure, strenuous physical working condition and projection hostility are the predictor variables of severity of depression. Hence the hypothesis is accepted.

#### **6. Restatement of the hypothesis**

*There will be significant interaction between the classificatory factors (personality dimensions and demographic variables) in overall multiphasic hostility and its sub variables.*

Two-way ANOVA was performed for testing the hypothesis. And it was found that there is significant interaction effect between some of the

variables of IAS dimension of personality and demographic variables such as years of service, marital status, religion, service sector, qualification and age with overall multiphasic hostility and its sub variables. Hence the hypothesis is accepted.

#### **7. Restatement of the hypothesis**

*There will be significant interaction between the classificatory factors (personality dimensions and demographic variables) in overall occupational stress and its sub variables.*

For testing the hypothesis, two-way ANOVA was used, and the results indicate that, some of the variables have been found significant interaction effect between personality dimensions and the above said all the job related demographic variables with overall occupational stress and its sub variables. So the hypothesis is accepted.

#### **8. Restatement of the hypothesis**

*There will be significant interaction between the classificatory factors (personality dimensions and demographic variables) in 3 types of HDI scores.*

Here also two-way ANVOA was performed for testing the hypothesis. From the results it was reported that, there is significant interaction effect between some of the variables of personality dimensions of IAS and the above mentioned job related demographic variables with 3 types of HDI – scores. Hence the hypothesis is accepted.

#### **9. Restatement of the hypothesis**

*There will be significant interaction between the classificatory factors (personality dimensions and hostility) in 3 types of HDI – scores.*

Two-way ANOVA was used for testing the hypothesis and it was found that there is significant interaction effect between IAS personality dimensions and 3 types of HDI scores with high degree of hostility. Hence the hypothesis is accepted.

#### **10. Restatement of the hypothesis**

There will be significant interaction between the classificatory factors (personality dimensions, hostility and occupational stress) on 3 types of HDI-scores.

For testing the hypothesis, before going to the higher analysis cell distribution was performed. It was observed that, the results obtained are in trouble with the cell distribution. And only one personality dimension is distributed with adequate number of participants. So the hypothesis can be partially accepted and for substantiating the results additional hypotheses were formed by the investigator.

#### **11. Restatement of the hypothesis**

*There is significant difference between low and high stress groups on 3 types of HDI scores.*

t-test analysis was done for testing the hypothesis and it was found that, there is significant difference between 3 types of HDI-scores with stress groups. Hence the hypothesis is accepted.

### **Major Findings of the Study**

#### **I Relationship among variables.**

1. There are significant negative relationship between inertia and activation; inertia and stability and activation and stability.

2. There is high significant relationship between self criticism, guilt, cynicism, acting out, criticizing others and projection hostility with overall multiphasic hostility.
3. There is high significant relationship between quantitative and qualitative overload, role ambiguity, role conflict, lack of participation, lack of autonomy, group pressure, lack of challenges, lack of control, interpersonal relations, promotion, job security, alienation, and strenuous physical working condition with overall occupational stress.
4. There is negative relationship between responsibility and overall occupational stress.
5. There are high significant relationship between depression symptomatology and clinical depression; depression symptomatology and severity of depression and clinical depression and severity of depression.
6. There is high significant relationship between inertia and overall multiphasic hostility.
7. There is significant negative relationship between stability and overall multiphasic hostility.
8. There is high significant relationship between inertia and overall occupational stress.
9. There is high significant negative relationship between activation and stability with overall occupational stress.
10. There is high significant relationship between inertia and depression.
11. There is high significant negative relationship between activation and stability with depression.

12. There is high significant relationship between self criticism, cynicism, criticizing others, projection hostility and overall multiphasic hostility with overall occupational stress.
13. There is high significant relationship between depression and hostility.
14. There is high significant relationship between depression and overall occupational stress.

## **II. Predictors of occupational stress.**

1. The variables that could predict occupational stress are inertia, projection hostility, cynicism and criticizing others.

## **III. Predictors of depression.**

1. Depressive symptomatology is predicted by the variables which are inertia, guilt, alienation, group pressure, lack of autonomy and promotion.
2. Clinical depression is predicted by the variables which are inertia, guilt, alienation, group pressure, strenuous physical working condition, promotion and job security.
3. The variables which could predict the severity of depression are inertia, role conflict, alienation, lack of participation, group pressure, strenuous physical working condition and projection hostility.

## **IV. Interaction among variables**

1. Experience of overall multiphasic hostility and its sub variables and overall occupational stress and its sub variables are differing accordingly with personality dimensions.

2. Inertia dominated personalities are more experiencing self criticism, cynicism, acting out, criticizing others, projection hostility and overall multiphasic hostility.
3. Self criticism and guilt has an interaction effect respectively of group I (1-5years) and II (6-10years) of years of service upon inertia dimension of personality.
4. Cynicism, criticizing others, role ambiguity, role conflict, lack of challenges and alienation are increasing with years of service.
5. Occupational stress and its sub variables are high in inertia dominated personalities.
6. Qualitative overload has an interaction effect upon inertia dimension with group I (1-5) of years of service, where as role ambiguity, group pressure and promotion has an interaction effect with group II (6-10 years) of inertia personality dimension.
7. Inertia dominated personalities are more susceptible to develop symptoms of depression, Clinical depression and melancholia.
8. Clinical depression and severity of depression are increasing with the years of service.
9. Depression symptomatology and severity of depression has an interaction effect upon inertia dimension of personality with group III (11years and above) of the service group.
10. Married nurses with inertia dimension of personality are more experiencing self criticism and cynicism. And guilt is more experienced by married nurses with activation dimension of personality.

11. Problems of interpersonal relations are more faced by unmarried nurses, where as alienation and strenuous physical working condition are more faced by married nurses.
12. Married nurses with inertia dominated personalities are more experiencing quantitative overload and overall occupational stress.
13. The feelings of guilt and projection hostility are more experienced by the nurses who are belonging to the age group of 26-34years.
14. As the age increases, self criticism and criticizing others are also increasing with inertia dimension of personality and guilt is increasing with activation dimension of personality.
15. Role conflict, group pressure, responsibility, alienation, strenuous physical working condition and overall occupational stress are more experienced by the age group of 35-55 years but qualitative overload is high among the nurses of 22-25 years of the age group.
16. Nurses with inertia dimension of personality and with the age group of 35-55 years are more facing lack of participation, strenuous physical working condition and overall occupational stress and the same personality dimension with the age between 22-25 are more facing lack of control and 26-34 years of age, are more in interpersonal relations.
17. Nurses of the age between 35-55 years with inertia dimension of personality are more susceptible to develop depressive symptomatology, clinical depression and severity of depression.
18. Self criticism, cynicism, criticizing others and overall multiphasic hostility are more faced by the nurses who are in Hindu religion, where as quantitative overload role ambiguity, strenuous physical working condition, depressive symptomatology and clinical depression are

more experienced by the nurses of Christian faith. And projection hostility, lack of participation and promotion are more in nurses of Muslim religious faith.

19. Nurses belong to Hindu religion with inertia dimension of personality are highly facing self criticism, qualitative overload and depression melancholia. And the stressors, lack of autonomy, interpersonal relations and promotion are more faced by nurses of Muslim religion with inertia.
20. Nurses who are working in private hospitals are highly facing self criticism, guilt and projection hostility. And the stressors such as lack of autonomy, lack of challenges, interpersonal relations and promotion
21. Major stressors for the nurses in government hospitals are quantitative overload, responsibility and strenuous physical working condition.
22. Clinical depression and severity of depression are differing significantly with personality dimension and the working sector.
23. B.Sc (N) qualified nurses are showing more projection hostility and facing stressors such as lack of control and interpersonal relations, where as the major stressors of GNM qualified nurses are qualitative overload, group pressure and responsibility.
24. There is interaction effect between personality dimension and qualification with depressive symptomatology and clinical depression.
25. Nurses of inertia dimension of personality with high degree of hostility are more susceptible to develop depressive symptomatology, clinical depression and severity of depression.

## **V. Test of significant difference**

1. Nurses with high occupational stress are more prone to develop depressive symptomatology, clinical depression and severity of depression.

### **Implications of the Study**

The rate of workplace depression is on the rise. It represents one of the most common, most debilitating and most expensive mental health disorders contributing to work impairment in a large number of adults. Even though it is a treatable disease, the impact of undiagnosed and untreated depression takes on the economy is largely due to indirect costs of absenteeism poor performance and decreased productivity. So that proper diagnosis and treatment, is essential. Hence this study opening an opportunity to suggest, the need and service of an industrial clinical psychologist in each and every organization and industries in the present century.

Employers, Managers, and Supervisors are should be trained, able to discuss and respond to mental health issues in the workplace. So that there is an opportunity for early intervention, effective treatment/management and rapid, sustained return-to-work efforts, saving billions in lost productivity while returning individuals to productive life styles. And they must be aware about to recognize the organizational symptoms of depression and how to get the appropriate treatment.

The workplace is an appropriate environment for educating individuals and raising their awareness of mental health difficulties in order to target mental health problems and prevent them from developing mental ill health. It is also a best way to combat the stigma that often keeps people from getting effective treatment.

To establishing and promoting Employee Assistance Programs (EAP) can be effective in early detection and treatment of depression. Employees with access to employee assistance program can contact trained workplace counselors or psychologists or they may get referrals to mental health professionals. Thus Employee Assistance Programs, which help to increase productivity and help employees address issues before they become serious enough to affect productivity and availability for work.

Stress has now become part of the every day language of the workplace. Based on the study it is emphasizing that, to implement stress management programs personal enhancement programs: it will help to prevent onset of depression. And also there is a vast scope to develop specific intervention strategies. Individual focused and organization focused interventions needed to alleviate stress from the workplace. Individual focused should be design to affect individual coping strategies and organization focused should be aim to change the industrial organizational context.

Employers and managers are assured that to provide healthy working conditions to their employees and also to maintain a good relationship with them.

Since, the participants of the study are nurses; they also should be benefited that they must be aware of the symptoms of workplace depression and other workplace mental illnesses, stress reduction techniques etc. The training can be imparted during their course time or in the workplace as in the mode of refresher courses.

### **Limitations of the Study**

1. Male nurses are not included in the study. So it can be extended by including them. Then the results can be more generalized.
2. The participants of the study are limited only with nurses' community. The workplace depression can be explored in different industrial and organizational settings like military and para military, governmental and non-governmental organizations, factories etc.
3. The present investigation was not studied the contribution and effect of some other organizationally relevant variables prone to mental illnesses. The study can be extended with including those variables like, organizational climate, personal and familial stress workplace harassment etc.

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# *Appendices*

Appendix I

MATHEW  
IAS RATING SCALE

V. George Mathew. Ph.D.  
1995

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Malayalam Version

ഒരു വ്യക്തിയിലുള്ള താമോരജോസത്വ ഗുണങ്ങളുടെ ഏറ്റക്കുറച്ചിലുകൾ അളക്കുന്ന ഒരു ചോദ്യാവലിയാണ് ഇത്.

ഇതുപയോഗിച്ച് സ്വന്തം വ്യക്തിത്വമോ മറ്റൊരാളുടെ വ്യക്തിത്വമോ അളക്കാവുന്നതാണ്.

ഈ കടലാസ്സിൽ ഒന്നും എഴുതരുത്. പ്രത്യേകം തന്നിരിക്കുന്ന ഉത്തരക്കടലാസ്സ് ഉപയോഗിക്കുക.

താഴെ 35 സ്കെയിലുകൾ കൊടുത്തിരിക്കുന്നു. ഓരോന്നിലും I,A.S. എന്ന് പേര് കൊടുത്തിട്ടുള്ള മൂന്ന് സ്വഭാവ വർണ്ണനകളുണ്ട്. ഈ മൂന്ന് ഉത്തരങ്ങളിലായി വീതിക്കാൻ മൊത്തം 3 പോയിന്റുകൾ തന്നിരിക്കുന്നു. കഴിയുന്നത്ര വസ്തുനിഷ്ഠമായി പോയിന്റുകൾ വീതിക്കുക. വ്യക്തിയുടെ പെരുമാറ്റത്തിൽ മൂന്നു ഗുണങ്ങളും (ശീലങ്ങളും) തുല്യമായിട്ടാണ് കാണപ്പെടുന്നതെങ്കിൽ പോയിന്റുകൾ തുല്യമായി (1,1,1) വീതിക്കുക. വ്യക്തിയിൽ ഒരു ഗുണം മാത്രമേ ഉള്ളൂ. മറ്റു രണ്ടു ഗുണങ്ങളും ഇല്ല എന്ന് നിങ്ങൾക്ക് തോന്നുന്നുവെങ്കിൽ ഉള്ള ഗുണത്തിന് 3 പോയിന്റും മറ്റും രണ്ടുഗുണങ്ങൾക്കും 0 വീതവും കൊടുക്കുക. വ്യക്തിക്ക് ഒരു ഗുണം കൂടുതലായും മറ്റൊന്ന് സാമാന്യമായും ഉണ്ടെന്നും മൂന്നാമത്തെ ഗുണം ഇല്ലെന്നും തോന്നിയാൽ പോയിന്റുകളെ 2,1,0 എന്ന് ഭാഗിക്കാവുന്നതാണ്. ഒരു സ്കെയിലിലെ ഉത്തരങ്ങളുടെ പോയിന്റുകൾ ഉത്തരക്കടലാസ്സിൽ ആ സ്കെയിലിന്റെ തമ്പറിനു നേർക്ക് ഉത്തരങ്ങളുടെ പേരിനു താഴെ എഴുതുക. ഒരു സ്കെയിലിന്റെ ഉത്തരങ്ങൾക്ക് കൊടുക്കുന്ന പോയിന്റുകളുടെ ആകെത്തുക 3 ആയിരിക്കണമെന്ന് ഓർമ്മിക്കുക. സ്കെയിലുകൾ ഒന്നും വിട്ടുകളയരുത്.

1. പ്രവർത്തനക്ഷമത

- I. പ്രവർത്തന വിമുഖത, വേണ്ടപ്പോൾ വേണ്ടത് ചെയ്യാതിരിക്കുക, നിഷ്ക്രിയത്വം
- A. അടക്കിമില്ലായ്മ, ആവശ്യത്തിൽ കൂടുതൽ പ്രവർത്തിക്കുക, അന്ധമായ പ്രവർത്തനം
- S. വേണ്ടസമയത്ത് വേണ്ടത് ചെയ്യുക. ആത്മനിയന്ത്രണത്തോടുകൂടിയ പ്രവർത്തി, നിഷ്കാമകർമ്മം.

2. ഉന്മേഷം

- I. മടി, ആലസ്യം, ഉന്മേഷക്കുറവ്
- A. അധികോന്മേഷം, നിയന്ത്രണമില്ലായ്മ
- S. ആവശ്യമായ നിതന്ത്രിതമായ ഉന്മേഷം

3. **വേഗത**
  - I. വേഗതക്കുറവ്, തെറ്റുണ്ടാകുമോ എന്ന ഭയം
  - A. അമിത വേഗത, പതുകെ പ്രവർത്തിക്കാൻ പ്രയാസം
  - S. വേഗത്തിലും കൃത്യമായുള്ള പ്രവർത്തി, ആവശ്യമനുസരിച്ചുള്ള വേഗത
4. **കൃത്യനിഷ്ഠ**
  - I. താമസിച്ചു വരിക, ചെയ്യേണ്ടസമയത്ത് ജോലികൾ ചെയ്യാതിരിക്കുക
  - A. ധൃതി, ക്ഷമയില്ലായ്മ
  - S. കൃത്യനിഷ്ഠ
5. **കാഴ്ചപ്പാട്**
  - I. ഇപ്പോഴത്തെ പ്രശ്നങ്ങളെപ്പറ്റി മാത്രം ചിന്തിക്കുക
  - A. ഭാവിയിലെ പ്രായോഗിക കാര്യങ്ങൾ കാര്യക്ഷമമായി ആസൂത്രണം ചെയ്യുക
  - S. വിശാലമായ കാഴ്ചപ്പാട്, ദാർശനിക ചിന്ത, വിവേകം.
6. **മാനസിക വ്യാപാരം**
  - I. ചിന്താശീലം ഇല്ലായ്മ
  - A. പ്രായോഗിക കാര്യങ്ങളിൽ കുർമ്മബുദ്ധി
  - S. ഉൾക്കാഴ്ച ആത്മജ്ഞാനം, ബോധം, ഉണർവ്
7. **സാഹസികത**
  - I. സാഹസികത ഒട്ടും ഇല്ലാതിരിക്കുക
  - A. അമതിമായ സാഹസികത
  - S. ആവശ്യമായ, മിതമായ കണക്കുകൂട്ടിയുള്ള സാഹസികത
8. **സ്വഭാവം**
  - I. പിൻവലിയുന്ന സ്വഭാവം, മാനസികമായ ഒളിച്ചോട്ടം
  - A. എടുത്തുചാട്ടം, വീണ്ടുവിചാരമില്ലായ്മ
  - S. മിതത്വം, പക്ഷത
9. **യൈര്യം**
  - I. ഭീരുത്വം
  - A. അന്ധമായ ശാരീരികമായ യൈര്യം
  - S. മാനസിക ശക്തിയും യൈര്യവും വിശ്വാസ ദാർഢ്യം, മനക്കരുത്ത്
10. **ജീവിതത്തോടുള്ള സമീപനം**
  - I. വിചാരപ്പെടുക, ഒഴിഞ്ഞുമാറുക
  - A. പിടിച്ചുപറ്റുക, കയറിപ്പറ്റുക, പിടിച്ചടക്കുക
  - S. ഊഷ്മളമായ, തുറന്ന മനസ്ഥിതി, ആസക്തിയില്ലായ്മ

11. **ചോദന**  
 I. അപ്രായോഗികമായ മോഹങ്ങൾ, ദിവാസ്വപ്നങ്ങൾ  
 A. തീവ്രമായ ദുരാഗ്രഹവും അതിമോഹവും അവയ്ക്കുവേണ്ടിയുള്ള ശ്രമവും  
 S. സംത്യപ്തി, പൂർണ്ണത
12. **അനുരഞ്ജനം**  
 I. ആധി, വിഷാദം  
 A. ഉന്മാദം, ഇളക്കം, ഹിസ്റ്റീരിയ  
 S. ശാന്തി, സന്തുലിതാവസ്ഥ
13. **വൈകാരികത**  
 I. വൈകാരികത ഇല്ലായ്മ  
 A. തീവ്രവും തീഷ്ണവുമായ വികാരം, ബന്ധങ്ങൾ  
 S. നിയന്ത്രിയമായ ഉദാത്തീകരിക്കപ്പെട്ട നിർവ്വീകാരത
14. **ഇച്ഛാശക്തി**  
 I. ദുർബ്ബലമായ ഇച്ഛാശക്തി  
 A. ആത്മനിയന്ത്രണത്തിനുള്ള തീവ്രശ്രമം, ആന്തരിക സംഘർഷം  
 S. സ്വാഭാവികമായ പൂർണ്ണ ആത്മ നിയന്ത്രണം.
15. **അവകാശങ്ങളും കടമകളും**  
 I. സ്വന്തം അവകാശങ്ങളെയും കടമകളെയും പറ്റി ബോധവാനല്ലാതിരിക്കുക  
 A. അവകാശങ്ങൾക്കുവേണ്ടി പൊരുതുക, പക്ഷേ സ്വന്തം കടമകളെപ്പറ്റി ബോധവാനല്ലാതിരിക്കുക.  
 S. കടമകളെയും അവകാശങ്ങളെയുംപറ്റി ബോധവാനായിരിക്കുകയും അതനുസരിച്ച് പ്രവർത്തിക്കുകയും ചെയ്യുക
16. **നേതൃത്വം**  
 I. നേതൃത്വം വഹിക്കാനോ മറ്റുള്ളവരെ നയിക്കാനോ ഉള്ള കഴിവില്ലായ്മ  
 A. സ്വേച്ഛാധിപത്യ പ്രവണത, അധികാരഭ്രമം, അഹന്ത, അനുയായി ആയിരിക്കാനുള്ള കഴിവില്ലായ്മ  
 S. ജനാധിപത്യ മാതൃകയിലുള്ള നേതാവ്, സന്ദർഭമനുസരിച്ച് നേതാവോ, അനുയായിയോ ആയി പ്രവർത്തിക്കാനുള്ള കഴിവ്
17. **പ്രതികരണ ശേഷി**  
 I. പ്രതിഷേധിക്കാനും വാദിക്കാനും ചോദിച്ചു വാങ്ങാനുമുള്ള കഴിവില്ലായ്മ  
 A. അമിത പ്രതിഷേധം, നിശ്ശബ്ദമായി സഹിക്കാനുള്ള കഴിവില്ലായ്മ, ധിക്കാരം  
 S. സന്ദർഭമനുസരിച്ച് നിശ്ശബ്ദമായി സഹിക്കാനോ, ശക്തമായി പ്രതികരിക്കാനോ ഉള്ള കഴിവ്

18. **കോപം**  
 I. കോപം ഭാവിക്കാനുള്ള കഴിവില്ലായ്മ  
 A. മുൻകോപം, കോപം നിയന്ത്രിക്കാൻ കഴിവില്ലായ്മ  
 S. വാസ്തവത്തിൽ ആത്മ നിയന്ത്രണം വിടാതെ കോപം അഭിനയിക്കാനുള്ള കഴിവ്
19. **നീതിബോധം**  
 I. ചൂഷണത്തിന് വിധേയനാകുക  
 A. മറ്റുള്ളവരെ ചൂഷണം ചെയ്യുക  
 S. മറ്റുള്ളവരോടും തന്നോട് തന്നെയും നീതിപൂലർത്തുക
20. **മറ്റാളുകളോടുള്ള ബന്ധം**  
 I. വികാരങ്ങൾ പെട്ടെന്ന് മുറിപ്പെടുക, ദുർബ്ബലത  
 A. തൊലിക്കട്ടി, തൻകാര്യങ്ങൾ  
 S. ദയ, കാരൂണ്യം, സ്നേഹം, ദീനാനുകമ്പ
21. **സ്വത്തിനോടുള്ള ബന്ധം**  
 I. സ്വന്തം സ്വത്തുക്കൾ സൂക്ഷിക്കാനുള്ള കഴിവില്ലായ്മ  
 A. മമത, ദുരാഗ്രഹം, അഹംഭാവം, മിഥ്യാഭിമാനം  
 S. പരോപകാരി, നിസ്സംഗത്വം
22. **ആത്മവിശ്വാസം**  
 I. അപകർഷതാ ബോധം  
 A. വീമ്പുപറച്ചിൽ, അഗീകാരത്തിനുവേണ്ടിയുള്ള തൃഷ്ണ  
 S. ആത്മസംതൃപ്തി, ആത്മവിശ്വാസം
23. **മൂല്യങ്ങൾ**  
 I. സുഖത്തെ മാത്രം വിലമതിക്കുക, മൂല്യങ്ങളുടെ അഭാവം  
 A. അധികാരം, പ്രശസ്തി, പദവി ഇവയെ വിലമതിക്കുക  
 S. സൗഹൃദം, വിവേകം, സ്വഭാവശുദ്ധി ഇവയെ വിലമതിക്കുക.
24. **ആക്രമണാസക്തി**  
 I. ആത്മപീഡനം, കുറ്റബോധം, തനിക്കുവേണ്ടി വാദിക്കാൻ കഴിവില്ലാതിരിക്കുക  
 A. മറ്റുള്ളവരെ വേദനിപ്പിക്കാനും, ശിക്ഷിക്കാനും പ്രയാസം തോന്നാതിരിക്കുക  
 S. മറ്റുള്ളവരോടും തന്നോടുതന്നെയും ക്ഷമിക്കുക
25. **അപരിചിതരോടുള്ള മനോഭാവം**  
 I. അപരിചിതരോട് ഇടപെടൽ പ്രയാസം തോന്നുക  
 A. ആരുമായും പെട്ടെന്ന് ഇടപഴകുക, തനിച്ചിരിക്കാൻ പ്രയാസം തോന്നുക  
 S. തനിച്ചിരിക്കാനോ, ആളുകളുമായി ഇടപെടാനോ ഒരുപോലെ സാധിക്കുക, പക്ഷെ, തിരഞ്ഞെടുത്ത കുറെ അടുത്ത സുഹൃത്തുക്കൾമാത്രം ഉണ്ടായിരിക്കുക

26. **ആളുകളുമായുള്ള ഇടപെടൽ**  
 I. മറ്റുള്ളവരുമായി അധികം ഇടപെടാൻ ഇഷ്ടപ്പെടാതിരിക്കുക  
 A. ധാരാളം പേരുമായി ഇടപഴകി ഇഷ്ടപ്പെടുക, ഏകാന്തത സഹിക്കാൻ പ്രയാസം തോന്നുക  
 S. തനിച്ചിരിക്കുന്നതും മറ്റുള്ളവരുടെ കൂടെ ഇരിക്കുന്നതും ഒരുപോലെ ഇഷ്ടപ്പെടുക
27. **പ്രസംഗം**  
 I. പ്രസംഗം നടക്കാൻ പരിഭ്രമവും ബുദ്ധിമുട്ടും തോന്നുക  
 A. സംസാരിക്കാൻ ഇഷ്ടപ്പെടുക, മിണ്ടാതിരിക്കാൻ പ്രയാസം തോന്നുക  
 S. സംസാരം കേൾക്കുന്നതും, പ്രസംഗിക്കുന്നതും രണ്ടും ഒരുപോലെ ഇഷ്ടപ്പെടുക
28. **എതിർലിംഗം**  
 I. എതിർലിംഗക്കാരുമായി ഇടപെടൽ പ്രയാസം അനുഭവപ്പെടുക  
 A. എതിർലിംഗക്കാരുമായി അങ്ങോട്ടു കയറി ഇടപെടുക  
 S. ലൈംഗികത തരണം ചെയ്യുക, ഉദാത്തീകരിക്കുക
29. **സാമൂഹ്യ കീഴ്വഴക്കങ്ങൾ**  
 I. അന്ധമായി സാമൂഹ്യ കീഴ്വഴക്കങ്ങളെ അനുസരിക്കുക  
 A. മനപ്പൂർവ്വം കീഴ്വഴക്കങ്ങളെ ലംഘിക്കുക, മാതൃക ബുദ്ധി  
 S. സ്വതന്ത്രചിന്തയും പ്രവർത്തിയും, സാമൂഹ്യപരിഷ്കർത്താവ്
30. **സൗഹൃദം**  
 I. ശക്തമായസുഹൃത് ബന്ധങ്ങൾ ഇല്ലാതിരിക്കുക  
 A. തീവ്രമായ വൈകാരിക ബന്ധങ്ങൾ, സ്വാർത്ഥമായ സ്നേഹവും വിരോധവും  
 S. നിസ്വാർത്ഥ സ്നേഹം കരുണ
31. **സാമൂഹ്യ താദാത്മീകരണം**  
 I. സമൂഹവുമായി ശക്തമായ ബന്ധം ഇല്ലാതിരിക്കുക  
 A. താരതമ്യേന അടുത്ത സ്വന്തം സമൂഹവുമായി വൈകാരികമായ ബന്ധം ഉണ്ടായിരിക്കുക, ശക്തമായ ദേശസ്നേഹം  
 S. എല്ലാവരുമായി എല്ലാ ജീവജാലങ്ങളുമായി വിശാലമായ തദാത്മീകരണം
32. **ധാർമ്മിക ബോധം**  
 I. തെറ്റ് - ശരി ഇവയെപ്പറ്റി ചിന്തിക്കാതിരിക്കുക, ദുർബ്ബലമായ മനസ്സാക്ഷി  
 A. ശക്തമായ മനസ്സാക്ഷി, കുറ്റബോധം, ധാർമ്മിക സംഘർഷം  
 S. സ്നേഹാധിഷ്ഠിതമായ ധാർമ്മിക ബോധം, സഹജമായ ആന്തരിക നിയന്ത്രണം

33. വിശ്വാസങ്ങൾ

- I. ഭയത്തിൽനിന്നും അനിശ്ചിതത്വത്തിൽനിന്നും രക്ഷപ്പെടാൻ വേണ്ടിയുള്ള വിശ്വാസങ്ങൾ
- A. ആത്മനിയന്ത്രണത്തിനു സഹായിക്കുന്ന വിശ്വാസങ്ങൾ
- S. ഉൾക്കാഴ്ച, തുറന്ന മന:സ്ഥിതി, അനിശ്ചിതത്വം, പ്രയാസകരമായി തോന്നാതിരിക്കുക

34. വാസ്തവികത

- I. ദാർശനികമായ കാര്യങ്ങളെപ്പറ്റി ചിന്തിക്കാതിരിക്കുക, ലോകം അയഥാർത്ഥമായി അംഗീകരിക്കാൻ തയ്യാറാവുക.
- A. പ്രയോഗികത, ലോകം പൂർണ്ണയാഥാർത്ഥ്യമാണെന്നു കരുതുക
- S. തുറന്ന മന:സ്ഥിതി, ലോകം ഒരനുഭവമെന്ന നിലയ്ക്ക് വാസ്തവമായും ഭൗതികതീതമായ വാസ്തവികതയുമായി താരതമ്യപ്പെടുത്തുമ്പോൾ അയഥാർത്ഥ്യമായും കാണുക.

35. വിധി

- I. വിധി, ഭാഗ്യം, ഇവയിൽ മാത്രം വിശ്വസിക്കുക
- A. മനുഷ്യ പ്രയത്നത്തിന്റെ മൂല്യം, സ്വതന്ത്രമായ ഇച്ഛാശക്തി ഇവയിൽ മാത്രം വിശ്വസിക്കുക
- S. മനുഷ്യ പ്രയത്നവും ഇച്ഛയും വിധിയാകുന്ന ചങ്ങലയുടെ കണ്ണികളായി കാണുക.

# MULTIPHASIC HOSTILITY INVENTORY

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The following are 45 statements about our feelings and reactions, while facing unpleasant behaviour from others or unpleasant situations. Read them carefully and indicate your level of agreement using ✓ marks in the columns for:

Always true ♦ Usually true ♦ Sometimes true ♦ Seldom true ♦ Never true

മറ്റുള്ളവരിൽ നിന്ന് അസ്വാസ്ഥ്യകരമായ പെരുമാറ്റങ്ങൾ ഉണ്ടാകുമ്പോഴോ അസ്വാസ്ഥ്യകരമായ അവസരങ്ങൾ നേരിടുമ്പോഴോ നമുക്കുണ്ടാകാറുള്ള വികാരങ്ങളെക്കുറിച്ചും, പ്രതികരണങ്ങളെക്കുറിച്ചുമുള്ള 45 പ്രസ്താവനകളാണ് താഴെ കൊടുത്തിരിക്കുന്നത്. അവ ഓരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് നിങ്ങളെ സംബന്ധിച്ച് എത്രമാത്രം ശരിയാണ്/ശരിയല്ല എന്ന് ✓ അടയാളമിട്ട് രേഖപ്പെടുത്തുക.

എപ്പോഴും ശരിയാണ് ♦ മിക്കപ്പോഴും ശരിയാണ് ♦ ചിലപ്പോൾ ശരിയാണ് ♦ അപൂർവ്വമായി ശരിയാണ് ♦ ഒരിയ്ക്കലും ശരിയല്ല എന്നിവയ്ക്കായുള്ള കോളത്തിൽ ഉത്തരം അടയാളപ്പെടുത്തുക.

Sl.No.	പ്രസ്താവനകൾ Statements	Always true എപ്പോഴും ശരിയാണ്	Usually true മിക്കപ്പോഴും ശരിയാണ്	Somerimes true ചിലപ്പോൾ ശരിയാണ്	Seldom true അപൂർവ്വമായി ശരിയാണ്	Never true ഒരിയ്ക്കലും ശരിയല്ല
1	സ്വയം വിമർശിക്കുന്ന സ്വഭാവം എനിക്കുണ്ട്. I subject myself to self-criticism.					
2	കോപം എന്നിൽ കുറ്റബോധത്തിന് ഇടയാക്കാറുണ്ട്. Anger evokes a sense of guilt in me.					
3	എനിക്ക് പലരോടും പകയുണ്ട്. I have malice towards many.					
4	എന്റെ കാര്യങ്ങൾക്ക് തടസ്സം നിൽക്കുന്നവരോട് എനിക്ക് കലിയാണ്. I hate those people who oppose me.					
5	ചിലരെയാക്കെ കാണുന്നതുതന്നെ എനിക്ക് വെറുപ്പാണ്. I hate the very sight of some people.					
6	മറ്റുള്ളവർ എന്നെ വിലയിരുത്തുന്നത് അവഹേളനമായി ഞാൻ കരുതുന്നു. I regard it as humiliation to be judged by others.					
7	മുൻപെടുത്ത തീരുമാനങ്ങൾ ഞാൻ തിരുത്താൻ ശ്രമിക്കാറുണ്ട്. I change my decision taken earlier.					
8	കുറ്റബോധം എന്നെ പിൻതുടരാറുണ്ട്. I am haunted by a sense of guilt.					
9	എന്നെ ഉപദ്രവിച്ചവരെ കൊല്ലാനുള്ള ദേഷ്യം എനിക്കുണ്ട്. I feel like killing those people who harm me.					
10	എനിക്ക് പകയുള്ളവർ എന്നോട് സ്നേഹം പ്രകടിപ്പിച്ചാൽ ഞാൻ അസ്വസ്ഥനാകും. I feel uneasy if my enemies show affection towards me.					

11	<p>പക കൊണ്ടു നടക്കുന്നതിനാൽ എന്റെ കാര്യങ്ങൾ വേണ്ട പോലെ ശ്രദ്ധിക്കാൻ എനിക്കു കഴിയുന്നില്ല.</p> <p>I am not able to dedicate myself fully to my work because of the feeling of hatred I maintain towards others.</p>					
12	<p>എന്റെ പല തീരുമാനങ്ങളിലും വേണ്ടത്ര ചിന്തിച്ചല്ല എന്നു ഞാൻ വിശ്വസിക്കുന്നു</p> <p>Most of my decisions are taken without much thought.</p>					
13	<p>എനിക്ക് പറയാൻ അബദ്ധങ്ങളും പരാധീനതകളും മുൻപു ചെയ്ത തെറ്റിന്റെ ഫലമായാണെന്ന് ഞാൻ വിശ്വസിക്കുന്നു.</p> <p>I believe that my inadequacies and failures are a result of my former misdeeds.</p>					
14	<p>എന്റെ പക വേണ്ടപോലെ പ്രകടിപ്പിക്കാൻ എനിക്ക് മാർഗ്ഗം ലഭിക്കാറില്ല</p> <p>I seldom get a chance to express my anger fully.</p>					
15	<p>എന്റെ ശത്രുക്കളോട് സൗഹൃദം പുലർത്തുന്നവരേയും എനിക്കിഷ്ടമല്ല</p> <p>I even hate those who are friendly with my enemies.</p>					
16	<p>തെറ്റു പറ്റിയാൽ ഞാൻ പശ്ചാത്തപിക്കാറുണ്ട്</p> <p>I regret my wrong doings.</p>					
17	<p>എന്റെ കഴിവുകൾ വിലയിരുത്താൻ എനിക്ക് കഴിയുന്നില്ല</p> <p>I am incapable of assessing my abilities.</p>					
18	<p>തെറ്റു പറ്റുക മനുഷ്യസഹജമാണെന്ന് ഞാൻ വിശ്വസിക്കുന്നു.</p> <p>I believe that to err is human.</p>					
19	<p>ശത്രുക്കളോടുള്ള പക ഞാൻ കൊണ്ടു നടക്കാറുണ്ട്.</p> <p>I nurse hatred towards my enemies and never allow it to diminish.</p>					
20	<p>എന്നെ ദ്രോഹിക്കുന്നവരോട് എനിക്ക് തീർത്താൽ തീരാത്ത പകയാണ്</p> <p>I never forgive those who hurt me.</p>					
21	<p>പകയുള്ളവർ എന്നെ പിൻതുടരുന്നതുണ്ടോ എന്ന് എനിയ്ക്ക് തോന്നാറുണ്ട്</p> <p>I doubt whether my enemies follow me with the intention of hurting me.</p>					
22	<p>എന്തിന്റെയും കുറ്റം കണ്ടെത്താൻ എനിയ്ക്കൊരു പ്രത്യേക കഴിവാണു്.</p> <p>Finding fault with everything is my nature.</p>					
23	<p>എന്നെ ഉപദ്രവിച്ചവരെ ഞാൻ വെറുതെ വിടാറില്ല</p> <p>I never pardon those who had hurt me.</p>					
24	<p>ആലോചിക്കാതെ തീരുമാനമെടുക്കുന്നവരെ ഞാൻ കഠിനമായി വിമർശിക്കാറുണ്ട്.</p> <p>I strongly criticise people who take decisions without thinking.</p>					
25	<p>ഞാൻ മറ്റുള്ളവരെ സംശയദൃഷ്ടിയോടെ വീക്ഷിക്കാറില്ല</p> <p>I am seldom suspicious of others.</p>					
26	<p>ബന്ധുക്കളും കൂട്ടുകാരും എന്റെ വളർച്ചയിൽ അസുയയുള്ളവരാണ്</p> <p>My family members and friends are jealous of my achievements.</p>					
27	<p>എന്റെ മാനസിക സമ്മർദ്ദത്തിന് കാരണമായ പലരും എന്റെ ചുറ്റുമുണ്ട്.</p> <p>I feel that many of the people around me are the cause of my mental tension.</p>					
28	<p>പകയുള്ളവരുമായി ഇടപഴകുന്നത് ഞാൻ മന:പൂർവ്വം ഒഴിവാക്കാറുണ്ട്</p> <p>I seldom associate with those whom I hate.</p>					

29	<p>പക എന്റെ പെരുമാറ്റത്തിലൂടെ പ്രകടമാകാതെ യിരിക്കാൻ ഞാൻ ശ്രദ്ധിക്കാറുണ്ട്</p> <p>I try to control the expression of hatred in my behaviour turned others.</p>					
30	<p>തെറ്റു കണ്ടാൽ ഉടനെ വിമർശിക്കുന്നയാളാണ് ഞാൻ.</p> <p>It is my habit to point out and criticize the mistakes of others.</p>					
31	<p>മറ്റുള്ളവരെ വിമർശിച്ച് നേർവഴിക്ക് നടത്താൻ എനിക്ക് കഴിയാറില്ല.</p> <p>I am not able to correct others through criticism.</p>					
32	<p>എനിക്ക് നല്ലതു വരുന്നതിൽ പലർക്കും വെറുപ്പാണ്.</p> <p>Many people are jealous of my success.</p>					
33	<p>ഈ ലോകത്തിൽ നന്മ വളരെ കുറവാണെന്ന എനിക്ക് തോന്നാറുണ്ട്.</p> <p>I feel that the world is devoid of good.</p>					
34	<p>എന്റെ പക ഞാൻ വാക്കുകളിൽകൂടെ പ്രകടമാക്കാറുണ്ട്.</p> <p>I express my hatred verbally.</p>					
35	<p>ദേഷ്യമുള്ളവരെപ്പറ്റി ആലോചിക്കുമ്പോൾ മുഷ്ടി ചുരുട്ടി പലയിടത്തും ഇടിക്കാൻ എനിക്ക് തോന്നാറുണ്ട്.</p> <p>I feel like punching on the walls when I think of my enemies.</p>					
36	<p>ദേഷ്യമുള്ളവരെപ്പറ്റി ഞാനെന്റെ സുഹൃത്തുക്കളോട് പറയുക പതിവാണ്.</p> <p>I comment about my enemies to my friends</p>					
37	<p>മറ്റുള്ളവരെപ്പറ്റി തുറന്ന അഭിപ്രായപ്രകടനം നടത്തുന്നയാളാണ് ഞാൻ</p> <p>I am of the nature of openly expressing my opinions about others.</p>					
38	<p>ദേഷ്യമുള്ളവരെപ്പറ്റി ഞാനെന്റെ സുഹൃത്തുക്കളോട് പറയുക പതിവാണ്.</p> <p>I comment about my enemies to my friends.</p>					
39	<p>കുട്ടികൾ പക ഉള്ളിൽ സൂക്ഷിക്കുന്നവരാണ്</p> <p>Children secretly nurse their hostility.</p>					
40	<p>ചർച്ചകളിൽ എനിയ്ക്ക് പകയുള്ളവരെ ഞാൻ മന:പൂർവ്വം ഒഴിവാക്കാൻ ശ്രമിക്കാറുണ്ട്</p> <p>I deliberately avoid my enemies in my discussion.</p>					
41	<p>പക മുഖത്തും ചിരിയിലും, ശബ്ദത്തിലൂടെയുമെല്ലാം ഞാൻ പ്രകടമാക്കാറുണ്ട്</p> <p>I express hatred through facial expressions, sound and laughter.</p>					
42	<p>എന്റെ അനുഭവത്തിൽ അബദ്ധത്തിൽ പറ്റിയ തെറ്റുപോലും പകയാക്കി മാറ്റുന്നവരാണ് ഇന്നുള്ളവരിൽ പലരും.</p> <p>In my opinion many regard mistakes unwittingly made as malice.</p>					
43	<p>സാഹചര്യമനുസരിച്ച് മറ്റുള്ളവരെ ഞാൻ നന്നായി വിമർശിക്കും</p> <p>I vehemently criticize others when I get a suitable situation.</p>					
44	<p>നമുക്കുചുറ്റും കാണുന്ന പലരും ഉള്ളിൽ പകയുള്ളവരാണെന്ന് എനിക്ക് തോന്നുന്നു.</p> <p>I feel that the people we see around nurture hatred.</p>					
45	<p>എന്റെ സുഹൃത്തുക്കളിൽ പലരും ആത്മാർത്ഥതയുള്ളവരാണ്.</p> <p>Many of my friends are sincere.</p>					

Name : Age: Sex:  
 Education : Religion & Caste:  
 Locality of living : Village/Town  
 Health Problems :

Appendix III

**OCCUPATIONAL STRESS INVENTORY**

**Dr. M.I. Joseph, Dr. C. Jayan & Dr. B. Dharmangadan**

**2004**

This questionnaire is meant for a psychological investigation. The questionnaire consists of a number of statements that employees sometimes feel or say various components of their jobs. The following five-point scale is to be used to indicate the extend to which you agree with each statement to describe your own job and the experiences or feelings about your job.

**Strongly Agree (A) / Agree (B) / Undecided (C) / Disagree (D) / Strongly Disagree (E)**

For example, if you strongly disagree with the following statement, in context of your job, put 'E' in box given against it.

"I have to do my work under tense circumstances"  E In case you disagree with the above statement put (D) in place of 'E' and so on. Give your responses frankly. Your responses will be kept strictly confidential.

ഒരു മനശ്ശാസ്ത്രപഠനത്തിനു വേണ്ടിയുള്ളതാണ് ഈ ചോദ്യാവലി. തങ്ങളുടെ തൊഴിലിന്റെ വിവിധ വശങ്ങളെപ്പറ്റി ജീവനക്കാർക്ക് തോന്നുകയോ അവർ പറയുകയോ ഒക്കെ ചെയ്യാറുള്ള ഏതാനും പ്രസ്താവനകളാണ് ചോദ്യാവലിയിലുള്ളത്. താങ്കളുടെ ജോലിയുടെ കാര്യത്തിൽ ഓരോ പ്രസ്താവനയും എത്രകണ്ട് ശരിയാകും എന്ന് പ്രസക്തമായ അക്ഷരം കൊണ്ട് സൂചിപ്പിക്കുകയാണ് ചെയ്യേണ്ടത്.

ശക്തിയായി യോജിക്കുന്നുവെങ്കിൽ (A) യോജിപ്പോ വിയോജിപ്പോ എന്ന് പറയാൻ പറ്റില്ലെങ്കിൽ (C) വിയോജിക്കുന്നുവെങ്കിൽ (D) ശക്തിയായി വിയോജിക്കുന്നുവെങ്കിൽ (E).

ഉദാഹരണത്തിന് ഈ പ്രസ്താവന നോക്കുക.

വളരെ പിരിമുറുക്കമുള്ള അന്തരീക്ഷത്തിലാണ് എനിക്ക് ജോലി ചെയ്യേണ്ടത്

ഇതിനോട് ശക്തമായ വിയോജിപ്പാണ് താങ്കൾക്കെങ്കിൽ കള്ളിയിൽ 'E' എന്നെഴുതുക. മറിച്ച് അത്രശക്തമായ വിയോജിപ്പാണെങ്കിൽ 'D' എന്നെഴുതുക.

സത്യസന്ധമായി ഇത് പൂരിപ്പിക്കുമല്ലോ. താങ്കളുടെ മറുപടി തികച്ചും രഹസ്യമായി സൂക്ഷിക്കുന്നതാണ്.

1. I am having a lot of work which cannot be finished within a normal working day.   
ഒരു സാധാരണ പ്രവൃത്തി ദിനം കൊണ്ട് ചെയ്തു തീർക്കാനാവത്തത്ര പണിയുണ്ട് എനിക്ക്
2. I am having a good lot of leisure time during my working hours.   
പ്രവൃത്തിസമയത്ത് ധാരാളം ഒഴിവ് എനിക്ക് കിട്ടാറുണ്ട്
3. I have to participate in work activities outside of my normal working hours at the expense of personal time.  
സാധാരണ പ്രവൃത്തി സമയവും കഴിഞ്ഞ എന്റെ സ്വന്തം സമയം മുടക്കി ഞാൻ തൊഴിൽ പ്രവർത്തനങ്ങളിൽ ഏർപ്പെടേണ്ടി വരുന്നു
4. I often have to face unreasonable pressure for more work.  
കൂടുതൽ ജോലി ചെയ്യാൻ എന്റെ മേൽ അന്യായമായി സമ്മർദ്ദമുണ്ടാകാറുണ്ട്.
5. I have to do some of the work which ought to be done by others.  
മറ്റുള്ളവർ ചെയ്യേണ്ട ജോലികൾ ഞാൻ ചെയ്യേണ്ടി വരുന്നു
6. I am unable to carry out my assignments to my satisfaction on account of excessive load of work and lack of time.  
അമിതമായ ജോലിഭാരവും സമയക്കുറവും കാരണം എനിക്ക് തൃപ്തികരമായ വിധത്തിൽ എന്റെ ജോലി ചെയ്യാൻ കഴിയാതെ വരുന്നു.
7. In my job, I often have to face unreasonable pressure for better performance.  
ഇതിലും കൂടുതൽ നന്നായി ജോലിചെയ്യണം എന്നുള്ള അത്യധികമായ സമ്മർദ്ദം പലപ്പോഴും എനിക്ക് തൊഴിലിൽ നേരിടേണ്ടി വരുന്നു.
8. If adequate training and facilities are provided I can perform my duties in a far better way.  
മതിയായ പരിശീലനവും സൗകര്യങ്ങളും ലഭ്യമാക്കിയാൽ എനിക്ക് എന്റെ ചുമതലകൾ ഇനിയുമെത്രയോ നന്നായി ചെയ്യാൻ കഴിയും
9. The standard of work expected of me; in my job far outweigh my abilities.   
എന്റെ കഴിവിനും എത്രയോ അപ്പുറമാണ് എന്നിൽ നിന്ന് പ്രതീക്ഷിക്കപ്പെടുന്ന ജോലിയുടെ നിലവാരം
10. The complexity of my duties at times makes me feel that I am not fully qualified for this job.   
എന്റെ ചുമതലകളുടെ സങ്കീർണ്ണത കാരണം ഈ ജോലിക്ക് ഞാൻ പൂർണ്ണയോഗ്യനാണോയെന്ന് എനിക്ക് ചിലപ്പോൾ തോന്നിപ്പോകാറുണ്ട്.

11. I am not clear about the scope and responsibilities of my job.   
 എന്റെ ജോലിയുടെ ഉത്തരവാദിത്വങ്ങളും വ്യാപ്തിയും എനിക്ക് വ്യക്തമായറിയില്ല.
12. I am not getting the information that is necessary to carryout my duties properly.   
 എന്റെ ചുമതലകൾ ശരിയായി നിർവഹിക്കാനാവശ്യമായ വിവരങ്ങൾ എനിക്ക് കിട്ടുന്നില്ല.
13. I have a clear picture of the do's and do not's expected of me, so that I don't have to take decisions at my own work.   
 ഞാൻ എന്തെല്ലാം ചെയ്യണം, എന്തെല്ലാം ചെയ്യരുത് എന്നതിനെപ്പറ്റി വ്യക്തമായ ധാരണ എനിക്കുള്ളതിനാൽ ജോലിക്കിടയിൽ തീരുമാനങ്ങളെടുക്കേണ്ട ആവശ്യം എനിക്കുണ്ടാകുന്നില്ല.
14. I am not provided with clear instructions regarding new assignments given to me in the job.   
 പുതിയ ഏതെങ്കിലും ജോലി എന്നെ ഏൽപ്പിക്കുമ്പോൾ അതിനെപ്പറ്റി വ്യക്തമായ നിർദ്ദേശങ്ങൾ കിട്ടാറില്ല.
15. In practice, I have to do things contradicting to the formal instructions of laws governing our work role.   
 തൊഴിലിലെ എന്റെ കർത്തവ്യങ്ങൾ സംബന്ധിച്ച നിയമാനുസൃത ചട്ടങ്ങൾക്കെതിരായി പലപ്പോഴും എനിക്ക് ചെയ്യേണ്ടിവരുന്നുണ്ട്.
16. Often I am confused by conflicting demands from those who have authority over me.   
 എന്റെ മേലധികാരികളിൽനിന്ന് പരസ്പര വിരുദ്ധങ്ങളായ നിർദ്ദേശങ്ങൾ വരുന്നത് പലപ്പോഴും എന്നിൽ ആശയക്കുഴപ്പമുണ്ടാക്കുന്നു.
17. In my job I often have to do things that are against my better judgement.   
 എന്റെ സാമാന്യബുദ്ധിക്ക് നിരക്കാത്ത പലതും ഞാൻ തൊഴിലിൽ ചെയ്യേണ്ടിവരുന്നു.
18. My subordinates often make suggestions that conflict with my own plans of work.   
 എന്റെ സഹപ്രവർത്തകരുടെ അഭിപ്രായങ്ങൾ പലപ്പോഴും എന്റെ സ്വന്തം പ്രവർത്തന പരിപാടികളുമായി യോജിക്കാത്തവയാണ്.
19. The role that I have to assume in thin job does not match the role that I like to take in my social life.   
 ഈ തൊഴിലിൽ ഞാൻ ഏറ്റെടുക്കേണ്ടിവരുന്ന സ്ഥാനം, സമൂഹത്തിൽ ഞാൻ ഇഷ്ടപ്പെടുന്ന സ്ഥാനമല്ല.

20. People often approach me with demands which oppose with other works I have to do.   
 എനിക്ക് ചെയ്യാനുള്ള മറ്റു പ്രവൃത്തികൾക്ക് എതിരായ കാര്യങ്ങൾക്കായി പലപ്പോഴും ആളുകൾ എന്നെ സമീപിക്കാറുണ്ട്.
21. I am always under pressure to please too many bosses.   
 പല മേലധികാരികളെ ഒരേ സമയം സന്തോഷിപ്പിക്കാനുള്ള സമ്മർദ്ദത്തിലാണ് എപ്പോഴും ഞാൻ.
22. Our organisation gives due weight to our suggestions and ideas regarding the various aspects of our work.   
 ഞങ്ങളുടെ ജോലിയുടെ വിവിധ വശങ്ങൾ സംബന്ധിച്ച് ഞങ്ങൾ മുന്നോട്ടുവെയ്ക്കുന്ന അഭിപ്രായങ്ങൾക്കും ആശയങ്ങൾക്കും അർഹിക്കുന്ന പ്രധാന്യം ഞങ്ങളുടെ സ്ഥാപനം നൽകാറുണ്ട്.
23. The policy making of the organisation is with our representatives.   
 ഞങ്ങളുടെ പ്രതിനിധികളുമായി ചർച്ച നടത്തിയിട്ടാണ് ഈ സ്ഥാപനം അതിന്റെ നയം തീരുമാനിക്കാറ്.
24. Even the reasonable suggestions that I make are often neglected by higher authorities.   
 എന്റെ ന്യായമായ അഭിപ്രായങ്ങൾ പോലും ഉന്നതാധികാരികൾ പലപ്പോഴും അവഗണിക്കുന്നു.
25. Our higher officials do welcome proposals of new ideas from among the subordinates.   
 കീഴ്ജീവനക്കാരിൽ നിന്നു വരുന്ന പുത്തൻ ആശയങ്ങളും നിർദ്ദേശങ്ങളും സ്വാഗതം ചെയ്യുന്നവരാണ്. ഞങ്ങളുടെ മേലധികാരികൾ
26. My opinion is often sought by others in helping set the way things are done on the job.   
 ജോലി ശരിയായ രീതിയിൽ ചെയ്യാൻ പറ്റുന്ന നിർദ്ദേശങ്ങൾ എന്നിൽ നിന്നു തേടാറുണ്ട്
27. I can make decisions regarding my work at my own discretion.   
 എന്റെ ജോലിയുമായി ബന്ധപ്പെട്ട കാര്യങ്ങൾ യുക്തംപോലെ തീരുമാനിക്കാൻ എനിക്ക് സ്വാതന്ത്ര്യമുണ്ട്
28. I am having too little authority to delegate duties to others.   
 മറ്റുള്ളവർക്ക് ചുമതല ഏൽപ്പിച്ചു കൊടുക്കാൻ വേണ്ട അധികാരം എനിക്കില്ല.

29. In view of my job responsibilities, I can function properly only if more authority is given to me.
- എന്റെ തൊഴിൽ ഉത്തരവാദിത്തങ്ങൾ വെച്ചുനോക്കിയാൽ കൂടുതൽ അധികാരങ്ങൾ കിട്ടിയാൽ മാത്രമേ എനിക്ക് ശരിയായി പ്രവർത്തിക്കാൻ കഴിയൂ.
30. I am free from close and constant supervision by my superiors
- മേലുദ്യോഗസ്ഥന്മാരുടെ സൂക്ഷ്മവും നിരന്തരവുമായ പരിശോധനയിൽ നിന്ന് മുക്തനാണ് ഞാൻ.
31. I have enough freedom to do things in my own way.
- കാര്യങ്ങൾ എന്റെ ഇഷ്ടാനുസരണം ചെയ്യാനുള്ള സ്വാതന്ത്ര്യം എനിക്കുണ്ട്.
32. Sufficient power/authority is not given to our department in view of its huge responsibilities.
- ഞങ്ങളുടെ കടുത്ത ഉത്തരവാദിത്തങ്ങൾക്കനുസൃതമായ അധികാരമങ്ങൾക്ക് തന്നിട്ടില്ല.
33. I am having sufficient power/authority to make independent decisions and when needed.
- ആവശ്യമുള്ളപ്പോൾ സ്വതന്ത്രതീരുമാനങ്ങളെടുക്കാനാവശ്യമായ അധികാരം എനിക്ക് കിട്ടിയിട്ടുണ്ട്.
34. Often it becomes difficult for me to make adjustment between outside pressures and the formal rules of the department.
- ബാഹ്യസമ്മർദ്ദങ്ങളും സ്ഥാപനത്തിന്റെ ഔദ്യോഗിക ചട്ടങ്ങളും തമ്മിൽ പൊരുത്തപ്പെടുത്താൻ ഞാൻ പലപ്പോഴും ബുദ്ധിമുട്ടാറുണ്ട്.
35. I am often compelled to violate the formal administrative procedures and practices owing to external pressures.
- ബാഹ്യസമ്മർദ്ദം കാരണം ഔദ്യോഗികമായ ഭരണച്ചട്ടങ്ങളും വഴക്കങ്ങളും പലപ്പോഴും എനിക്ക് ലംഘിക്കേണ്ടിവരുന്നു.
36. Some external forces interfere in our straight forward dealings.
- ചില ബാഹ്യശക്തികൾ ഞങ്ങളുടെ നേരായ ഇടപാടുകളിൽ അന്യായമായി ഇടപെടുന്നു.
37. Political and other external group pressures are the great curse to our profession.
- ഞങ്ങളുടെ തൊഴിലിലെ ഏറ്റവും വലിയ ശാപം രാഷ്ട്രീയവും മറ്റുമായ ബാഹ്യസമ്മർദ്ദങ്ങളാണ്.

38. The assignments given to me are of monotonous nature.   
 എനിക്ക് തന്നിട്ടുള്ള ചുമതലകൾ മടുപ്പിക്കുന്ന തരത്തിലുള്ളതാണ്.
39. I get ample opportunity in this job to utilize and develop my abilities and skills.   
 എന്റെ കഴിവുകളും ശേഷിയും വളർത്താൻ വേണ്ടത്ര അവസരങ്ങൾ എനിക്ക് ഈ ജോലിയിൽ ലഭിക്കുന്നുണ്ട്.
40. There is a good lot of variety in this job.   
 ഈ ജോലിയിൽ ധാരാളം വൈവിധ്യമുണ്ട്.
41. In this job, I have to engage in activities that are of little interest to me.   
 ഈ ജോലിയിൽ എനിക്ക് ഒട്ടും താൽപര്യമില്ലാത്ത പ്രവർത്തനങ്ങളിൽ ഞാൻ ഏർപ്പെടേണ്ടിവരുന്നു.
42. I get the opportunity to work on challenging problems in this job   
 ഈ ജോലിയിൽ എനിക്ക് ചില വെല്ലുവിളി നേരിടേണ്ടതുണ്ട്.
43. This job denies me the opportunity for expressing my feelings and ideas openly   
 എന്റെ വികാരങ്ങളും ആശയങ്ങളും തുറന്നു പ്രകടിപ്പിക്കാനുള്ള അവസരം ഈ ജോലി നിഷേധിക്കുന്നു.
44. My job imposes contain constraints in acting creatively and independently   
 ക്രിയാത്മകമായും സ്വതന്ത്രമായും പ്രവർത്തിക്കുന്നതിന് എന്റെ ജോലിയിൽ കുറേ നിയന്ത്രണങ്ങളുണ്ട്.
45. In this job, I seldom get a proper knowledge of the results of my action   
 ഞാൻ ചെയ്തതിന്റെ ഫലങ്ങളെപ്പറ്റി ശരിയായ അറിവ് എനിക്ക് ഈ ജോലിയിൽ കിട്ടുന്നില്ല.
46. I am having considerable control over the events happening in my work situations   
 എന്റെ തോഴിൽ സാഹചര്യങ്ങളിൽ നടക്കുന്ന സംഭവങ്ങൾക്കു മേൽ ഗണ്യമായ നിയന്ത്രണം എനിക്കുണ്ട്.
47. It is hard and sincere work rather than luck that leads to success in this job   
 കഠിനവും ആത്മാർത്ഥവുമായ പ്രവർത്തനമാണ് ഭാഗ്യത്തേക്കാൾ ഈ ജോലിയിൽ വിജയം നേടിത്തരുന്നത്.

48. However hard to try, things often go beyond my control in my job   
 ഈ ജോലിയിൽ എത്ര ശ്രമിച്ചാലും ചിലപ്പോൾ കാര്യങ്ങൾ എന്റെ നിയന്ത്രണത്തിനപ്പുറം പോകുന്നു.
49. I have sufficient-ability and powers to keep things under control even under very stressful conditions   
 വളരെ മാനസിക സംഘർഷമുള്ള സാഹചര്യത്തിലും കാര്യങ്ങൾ നിയന്ത്രണത്തിൽ നിർത്താനുള്ള ശേഷിയും കഴിവും എനിക്ക് വേണ്ടത്രയുണ്ട്.
50. Some of my colleagues and subordinate try to defence and malign me as unsuccessful.   
 ഞാൻ ഒരു പരാജയമാണെന്ന് പ്രചരിപ്പിച്ച് എന്നെ അപകീർത്തിപ്പെടുത്താൻ എന്റെ ചില സഹപ്രവർത്തകരും കീഴ്ജീവനക്കാരും ശ്രമിക്കാറുണ്ട്.
51. It is very difficult to get along with the people whom I work with കൂടെ ജോലി ചെയ്യുന്നവരുമായി ഒത്തുപോകാൻ വലിയ ബുദ്ധിമുട്ട് തോന്നുന്നു.
52. All people in our organisation are supportive of each others despite status distinction   
 ഞങ്ങളുടെ സ്ഥാപനത്തിൽ എല്ലാവരും പദവി വ്യത്യാസങ്ങൾ നോക്കാതെ പരസ്പരം സഹായിക്കും.
53. Conflict between hierarchies is a great problem in our organisation   
 ഉയർന്നവരും താഴ്ന്നവരുമായുള്ള പല തട്ടുകൾ തമ്മിലെ സംഘർഷം ഞങ്ങളുടെ സ്ഥാപനത്തിലെ ഒരു വലിയ പ്രശ്നമാണ്.
54. There exists sufficient mutual co-operation and team spirit among the members of our department.   
 ഞങ്ങളുടെ സ്ഥാപനത്തിലെ അംഗങ്ങൾ തമ്മിൽ പരസ്പര സഹകരണവും ടീം സ്പിരിറ്റും വേണ്ടത്രയുണ്ട്.
55. My superiors are ready to extend all possible to me in my work എന്റെ ജോലിയിൽ എനിക്ക് സാധ്യമായ എല്ലാ സഹായവും നൽകാൻ എന്റെ മേലുദ്യോഗസ്ഥൻ തയ്യാറാണ്.
56. I often feel it difficult to handle my subordinates എന്റെ കീഴുദ്യോഗസ്ഥരെ കൈകാര്യം ചെയ്യാൻ പലപ്പോഴും എനിക്ക് ബുദ്ധിമുട്ട് തോന്നുന്നു.

- 57. Our superiors always stand for their subordinates at time of crisis  
പ്രതിസന്ധി ഘട്ടങ്ങളിൽ കീഴ്ജീവനക്കാർക്കുവേണ്ടി എപ്പോഴും നില  
കൊള്ളുന്നവരാണ് ഞങ്ങളുടെ മേലധികാരികൾ
- 58. There is a high degree of loyalty among the members of or  
orgznisation  
ഞങ്ങളുടെ അംഗങ്ങൾ തമ്മിൽ വളരെയേറെ കുറുപുലർത്താറുണ്ട്
- 59. Taking everything into considerations, I am satisfied in my  
relationships with others in the organisation.  
പൊതുവെ പറഞ്ഞാൽ ഈ സ്ഥാപനത്തിലെ മറ്റുള്ളവരുമായുള്ള  
എന്റെ ബന്ധത്തെക്കുറിച്ച് ഞാൻ സംതൃപ്തനാണ്.
- 60. I am given very responsible work in my job.  
പ്രധാനമായ ചുമതലകൾ എനിക്ക് നൽകിയിട്ടുണ്ട്.
- 61. I often have to make decisions at my own risk that affect the  
future of others.  
മറ്റുള്ളവരുടെ ഭാവിയെ ബാധിക്കുന്ന തീരുമാനങ്ങൾ പലപ്പോഴും  
ഞാൻ സ്വന്തം നിലയ്ക്ക് എടുക്കേണ്ടിവരുന്നു.
- 62. I am having too much responsibility for maintaining the morale  
of our organisation  
ഞങ്ങളുടെ സ്ഥാപനത്തിൽ കെട്ടുറപ്പ് നിലനിർത്തുന്നതിന് എനിക്ക്  
വമ്പിച്ച ഉത്തരവാദിത്തമുണ്ട്.
- 63. Often, I have to work with my own safety in giving helping  
others.  
പലപ്പോഴും മറ്റുള്ളവരെ സഹായിക്കുന്നതിന് ഞാൻ രക്ഷ  
നോക്കാതെ പ്രവർത്തിക്കേണ്ടിവരുന്നു.
- 64. We are having a good chance of advancement in administrative  
authority and status in my job  
എന്റെ ജോലിയിൽ ഭരണാധികാരത്തിലും അന്തസ്സിലും ഉയർന്നുപോ  
കാൻ നല്ല അവസരം ഞങ്ങൾക്കുണ്ട്.
- 65. when it comes to promotion it is often favouritism or influences  
that counts rather than sincere work.  
സ്ഥാനക്കയറ്റത്തിന്റെ കാര്യത്തിൽ ആത്മാർത്ഥമായ പ്രവർത്തനങ്ങ  
ളെക്കാൾ ഇവിടെ പക്ഷപാതിത്തമാണ് പരിഗണിക്കപ്പെടുന്നത്.
- 66. I always feel worried, when I think of my future in this job  
ഈ തൊഴിലിലുള്ള എന്റെ ഭാവിയെപ്പറ്റി ചിന്തിക്കുമ്പോൾ എനിക്ക്  
ഉൽക്കണ്ഠയാണ്.
- 67. I am worried about my career prospects because of the very strict  
policies followed in our organisation  
ഞങ്ങളുടെ സ്ഥാപനത്തിലെ കർക്കശമായ നയം കാരണം എന്റെ  
തൊഴിൽ പുരോഗതിയെക്കുറിച്ച് എനിക്ക് ഉൽക്കണ്ഠയുണ്ട്.

68. I feel there is considerable security in my job.   
 എന്റെ തൊഴിലിൽ വളരെയധികം സുരക്ഷിതത്വമുണ്ടെന്ന് എനിക്ക് തോന്നുന്നു
69. The general public view the whole of us as inhuman creatures   
 പൊതുജനം ഞങ്ങളെ മുഴുവൻ കാണുന്നത് മനുഷ്യതമില്ലാത്തവരായിട്ടാണ്.
70. The nature of work makes me alienated from the main stream of society   
 സമൂഹത്തിന്റെ മുഖ്യധാരയിൽ നിന്ന് അന്യവൽക്കരിക്കപ്പെടുന്ന തരത്തിലുള്ള ജോലിയാണ് എന്റേത്
71. I am a bit hesitant to make social relationship with people outside the organisation.   
 സ്ഥാപനത്തിന് പുറത്തുള്ളവരുമായി സാമൂഹിക ബന്ധങ്ങളിലേർപ്പെടാൻ എനിക്ക് മടിച്ചാണ്.
72. There is a lot of difference between our world and the outside world   
 ഞങ്ങളുടെ സ്ഥാപനവും പുറംലോകവും തമ്മിൽ വളരെയേറെ വ്യത്യാസമുണ്ട്.
73. I have to do my work under tense circumstances   
 പിരിമുറുക്കമുള്ള അന്തരീക്ഷത്തിലാണ് എനിക്ക് ജോലി ചെയ്യാനുള്ളത്
74. I am always worried about physical environment in my work   
 എന്റെ ജോലിയുടെ ചുറ്റുപാട് എപ്പോഴും എന്നെ അലോസരപ്പെടുത്തുന്നു.
75. Working conditions, from the point of view of our welfare and convenience are satisfactory in my job.   
 ഞങ്ങളുടെ ക്ഷേമത്തിന്റേയും സൗകര്യത്തിന്റേയും കോണിൽ നോക്കിയാൽ എന്റെ ജോലിയിൽ തൊഴിലന്തരീക്ഷം തൃപ്തികരമാണ്.
76. Lonely and uncomfortable duties are very stressful to me in my job   
 ഏകാന്തവും അസുഖകരവുമായ ചുമതലകൾ എനിക്ക് എന്റെ ജോലിയിൽ മാനസിക സംഘർഷമുണ്ടാക്കുന്നു..
77. I have to work even under my adverse working conditions   
 അനഭിലഷണീയമായ സാഹചര്യങ്ങളിലൂടെ എനിക്ക് ജോലി ചെയ്യേണ്ടി വരുന്നുണ്ട്.

**HAMILTON DEPRESSION INVENTORY (HDI)**

**Hamilton, 1967**

**DIRECTIONS**

Use a sharp pencil or ballpoint pen (not a soft-tip pen) for completing this questionnaire on the answer sheet provided. Do not mark in this booklet. Print your name, today's date, your sex, race, age, years of education and occupation on the answer sheet. If you have an identification number, please enter this in the space provided.

This questionnaire asks about your current feelings and behaviour. Read each question and select the answer that best describes your behaviour or how you have been feeling for THE PAST 2 WEEKS. Darken the circle with the number on your answer sheet that corresponds to the answer you have selected. Please darken in only one circle for each question. Do not make any marks or write in this booklet. If you wish to change your answer on the answer sheet, put an X through the incorrect circle and fill in the correct circle. DO NOT ERASE. Be sure to answer each question. DO NOT leave any question blank unless the instructions tell you to skip that question.

- 1a. In the past 2 weeks, how often have you been bothered by feeling depressed (i.e., sad, blue, "down in the dumps")?
- 0) Not at all or rarely (if 0, skip to Question 2).
  - 1) Occasionally.
  - 2) Often (about half of the time).
  - 3) Very often.
  - 4) Almost all of the time.
- 1b. On average, how bad was the feeling of being depressed (i.e., sad, blue, "down in the dumps")?
- 1) Mild
  - 2) Moderate
  - 3) Severe
  - 4) Very severe
- 1c. When you are feeling depressed, to what extent does your mood lift when something good happens to you?
- 0) My mood lifts significantly, and I feel better.
  - 1) My mood lifts a bit, and I feel somewhat better.
  - 2) My mood lifts only minimally.
  - 3) My mood doesn't lift at all.

- 1d. How often do you cry or feel like crying?
- 0) Rarely
  - 1) Slightly more than usual for me.
  - 2) Quite a bit more than usual for me.
  - 3) Nearly all of the time.
- 1e. When you are feeling depressed or down in the dumps, are your feelings usually ?
- 0) No different in the morning or evening.
  - 1) Worse in the evening.
  - 2) Worse in the morning.
2. Do you blame yourself or feel guilty for things that have happened or that you have done?
- 0) I do not blame myself or feel guilty.
  - 1) I blame or feel mad at myself when little things go wrong.
  - 2) I feel guilty about things or feel that I have done something wrong.
  - 3) I feel VERY guilty or feel like I am or should be punished for something I did or that happened.
  - 4) I constantly feel extremely guilty for something very bad that has happened.
3. In the past 2 weeks, have you thought about suicide?
- 0) I have not had any thoughts about suicide.
  - 1) I feel like life is not worth living.
  - 2) I think about killing myself but have no plans.
  - 3) I think about killing myself and have a specific method or plan.
  - 4) I tried to kill myself in a way that I was sure would succeed.
- 4a. Over the past 2 weeks, how often did you have trouble falling asleep at night?
- 0) None of the time (if 0, skip to Question 5a).
  - 1) 1 to 2 nights a week.
  - 2) 3 to 5 nights a week.
  - 3) 6 to 7 nights a week.
- 4b. On those nights that you had trouble falling asleep, ON AVERAGE, how much longer than usual did it take you to fall asleep?
- 1) Less than ½ an hour.
  - 2) ½ an hour to 1 hour.
  - 3) Over 1 hour.

- 5a. How often did you have trouble with waking up in the middle of the night during the past 2 weeks? (Do not count waking up to go to the bathroom or waking due to external causes such as baby crying, phone calls, illness, etc.)
- 0) None of the time (if 0, skip to Question 6a).
  - 1) 1 to 2 nights a week.
  - 2) 3 to 5 nights a week.
  - 3) 6 to 7 nights a week.
- 5b. On average, how long did it take you to fall back to sleep again on those nights you woke up during the night?
- 1) Less than  $\frac{1}{2}$  an hour.
  - 2)  $\frac{1}{2}$  an hour to 1 hour.
  - 3) Over 1 hour.
- 6a. In the past 2 weeks, how often did you wake up earlier in the morning than usual and could not fall back to sleep again?
- 0) None of the time (if 0, skip to Question 7a).
  - 1) 1 to 2 nights a week.
  - 2) 3 to 5 nights a week.
  - 3) 6 to 7 nights a week.
- 6b. On average, how much earlier than usual did you wake up?
- 1) Less than  $\frac{1}{2}$  an hour.
  - 2)  $\frac{1}{2}$  an hour to 1 hour.
  - 3) Over 1 hour.
- 7a. Have you noticed any change in your interest in or ability to enjoy your usual activities? (For instance, your hobbies, work, social activities, family, or other leisure activities).
- 0) I still enjoy and am interested in my usual activities.
  - 1) I am somewhat less interested in or get less enjoyment from my usual activities.
  - 2) I am much less interested in or get less satisfaction from my usual activities.
  - 3) I get almost no pleasure out of any of my activities.
  - 4) I have lost ALL interest in and pleasure from my usual activities.
- 7b. Have you noticed any change in your work performance? (Either at home, office, school, etc.)
- 0) I work about as well as usual.
  - 1) I am less efficient, but I get most things done eventually.

- 2) I have to push myself to get my usual tasks accomplished, and some things remain undone.
  - 3) I have to push myself very hard to do even simple tasks, like washing or getting dressed.
  - 4) I am unable to work or take care of myself.
8. To what extent are you CURRENTLY feeling physically slowed down, for instance your movements, speech, and physical reactions? (This refers not just to an inner feeling, but that you are actually physically slower in your movements, speech, etc., so other people could actually notice it).
- 0) Not at all.
  - 1) I am a bit sluggish or slowed down.
  - 2) I move and speak noticeably slower than usual.
  - 3) It takes a great deal of energy or effort to move around or speak.
  - 4) It is extremely difficult to speak or engage in any physical activity at all
9. To what extent are you CURRENTLY feeling physically restless or fidgety, for instance having trouble sitting still for more than a few seconds? (This refers to more than just an inner feeling of tension or restlessness, but to actual physical movement that other people could notice).
- 0) Not at all.
  - 1) I am a bit jumpy or restless.
  - 2) I find myself very restless and fidgety.
  - 3) My restlessness is so bad that it is interfering with my life.
  - 4) I can't sit still for a few seconds, even if I try.
- 10a. How often have you felt anxious or nervous over the past 2 weeks?
- 0) Not at all or rarely (if 0, skip to Question 1).
  - 1) Occasionally.
  - 2) Often (about half of the time).
  - 3) Very often.
  - 4) Almost all of the time.
- 10b. On average, how bad was the feeling of anxiety or nervousness over the past 2 weeks?
- 1) Mild
  - 2) Moderate
  - 3) Severe
  - 4) Very Severe

For Questions 11a through 11d, please indicate how often you have experienced the following physical symptoms over the past 2 weeks.

- 11a. Heart pounding rapidly or loudly, chest pain, feeling flushed or faint?  
0) Not at all  
1) Occasionally.  
2) Often  
3) Almost constantly
- 11b. Sweating more than usual (not due to heat, exercise, or weather), dry mouth, or ringing in the ears?  
0) Not at all.  
1) Occasionally.  
2) Often  
3) Almost constantly.
- 11c. Indigestion, heartburn, stomachaches, gas, or diarrhoea (not due to illness or something you ate)?  
0) Not at all.  
1) Occasionally.  
2) Often.  
3) Almost constantly.
- 11d. Headaches, shaking or trembling, "pins and needles" feelings?  
0) Not at all.  
1) Occasionally.  
2) Often.  
3) Almost constantly.
12. How has your appetite been over the past 2 weeks?  
0) My appetite is fine.  
1) My appetite is not as good as usual.  
2) I have almost no appetite.
- 13a. Have you had less physical energy than usual to do things? (This is different from your interest in things and refers to your physical energy).  
0) I have as much energy as usual.  
1) I get tired more easily or have less energy than usual.  
2) I have almost no energy and feel tired almost all the time.
- 13b. To what extent are your muscles stiff, sore, or achy (not as a result of exercise, illness, or physical causes)?

- 0) My muscles usually are not tense or achy.
  - 1) I am often bothered by tense or aching muscles.
  - 2) My muscles constantly ache or are very tense.
14. Have you noticed any change in your interest in or pleasure from sex?
- 0) I have not noticed any change in my interest in or pleasure from sex.
  - 1) I am less interested in or enjoy sex less.
  - 2) I don't enjoy or feel like having sex at all anyone.
- 15a. Have you been worried much about your health?
- 0) I am not worried about my health (if 0, go to Question 16).
  - 1) I am somewhat concerned about my health.
  - 2) I am very concerned about my health.
  - 3) I am constantly worried about my health and am sure there is something wrong.
  - 4) I can feel parts of my body decaying or rotting away.
- 15b. Has a doctor found that something is wrong with you physically?
- 1) I have not gone to a doctor because of my health problems.
  - 2) I went to doctor, but he or she could not find anything wrong.
  - 3) The doctor found that I had a minor health problem.
  - 4) The doctor found that I had a major health problem.
16. You have just answered some questions about various symptoms and problems that you might be experiencing. What do you believe is causing these problems?
- 0) I am not currently bothered by many of the symptoms covered in this questionnaire.
  - 1) My symptoms are part of the problems I am currently having with depression.
  - 2) There might be some possibility that my symptoms are because I am depressed, but I don't really think so.
  - 3) My symptoms are definitely NOT because I am depressed or have an emotional problem.
- 17a. Have you lost any weight during the past 2 weeks?
- 0) None, or 1 to 2 pounds.
  - 1) 3 to 6 pounds.
  - 2) Over 6 pounds.
  - 3) Unsure, but I believe that I have lost some weight.

- 17b. Does it feel as if your clothes are fitting looser?  
0) No.  
1) Somewhat looser.  
2) Definitely looser.
- 17c. Are you purposely trying trying to lose weight by dieting?  
0) Yes.  
1) No.
- 18a. Over the past 2 weeks, how often have you unintentionally slept more than usual?  
0) None of the time (if 0, skip to Question 19).  
1) 1 to 2 days a week.  
2) 3 to 5 days a week.  
3) 6 to 7 days a week.
- 18b. On those days that you slept more than usual, on the average, how much longer did you sleep?  
1) ½ to 1 hour.  
2) 1 to 2 hours.  
3) Over 2 hours.
19. Do you feel helpless or incapable of getting everyday tasks done?  
0) Not at all.  
1) Occasionally  
2) Often.  
3) Almost constantly.
20. Over the past 2 weeks, did you sometimes feel that things around you were not real or that you were detached from your thoughts or actions?  
0) None of the time.  
1) I sometimes have mild feelings of unreality or detachment.  
2) Things around me do not seem real.  
3) I feel detached from myself and things around me.  
4) I feel totally detached from myself and the world around me.
21. Over the past 2 weeks, how have you been feeling about yourself?  
0) I feel OK about myself.  
1) I feel that I am somewhat inadequate  
2) I feel somewhat worthless as a person.  
3) I feel that I am a worthless person.  
4) I feel I am totally rotten and worthless as a person.

22. How does the future look to you?
- 0) OK.
  - 1) I feel a bit discouraged about the future.
  - 2) I am somewhat discouraged, and things seem hopeless to me.
  - 3) I am very discouraged and do not think that things will never get better.
23. Over the past 2 weeks, how often did you have difficulty making decisions?
- 0) Not at all or rarely.
  - 1) Occasionally.
  - 2) Often (about half of the time).
  - 3) Very often.
  - 4) Almost all of the time.





