Chapter - I

INTRODUCTION

- Diabetes mellitus
- Statement of the problem
- Objectives of the study
- Methodology in brief
- Hypotheses
- Organization of the report
“A wise man should consider that health is the greatest of human blessings, and learn how by his own thought to derive benefit from his illnesses.”

By Dr. Hippocrates

Health is "a state of complete physical, mental, and social well-being and not merely the absence of disease” (WHO, 1948). Health is achieved through a combination of physical, mental, emotional, and social well being, which, together is commonly referred to as the Health Triangle. In many definitions, physiological and psychological components of health are dichotomized. Other sub concept that might be included in the definition of Health include environment and social influences, freedom from pain or disease optimum capability, ability to adapt purposeful well-being. The term Health, has been derived from word “hoelth” means sound and “hale” means strength. Consequently a person is able to:

- Function adequately (can be objectively observed)
- Adapt adequately to the environment and
- Feel well as (subjectively assented).

A more modern approach has been to recognize that all medical illnesses are potentially affected by many different factors in the biological, psychological,
and social realms. Poor physical health increases the risk of people in developing mental health problems. Poor mental health is associated with an increased risk of diseases such as cardiovascular disease, cancer and diabetes, while good mental health is a known protective factor. An increased understanding of the links between physical health and mental health, and that improved mental health reduces the risk of cardiovascular and other diseases. Mind–body interactions have long been a focus of interest, both in health and in disease. Psychiatric illness and medical disease frequently coexist.

**Physical health and Mental Health**

Physical health or Physical fitness refers to body health, and is the result of regular exercise, proper diet and nutrition, and proper rest for physical recovery. This is also influenced by the standard of living and quality of life.

Mental health describes either a level of cognitive or emotional well-being or an absence of a mental illness. Mental health as "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community"(WHO, 2007).

There are four general determinants of physical and mental health including human biology, environment, lifestyle, and healthcare services. Thus, health is maintained and improved not only through the advancement and application of health science, but also through the efforts and intelligent lifestyle choices of the individual and society. Personal health depends partially on the social structure of one's life. The maintenance of strong social relationships is
linked to good health conditions, longevity, productivity, and a positive attitude. This is due to the fact that positive social interaction as viewed by the participant increases many chemical levels in the brain, which are linked to personality and intelligence traits. Hygiene is the practice of keeping the body clean to prevent infection and illness, and the avoidance of contact with infectious agents. Health of a person determines the lifestyle.

An individual’s health depends a lot on their lifestyle. Maintaining physical and mental health is crucial to an individual’s longevity. The more time spent on hygiene, physical fitness, and diet regulation, the healthier lifestyle they have. Mental illness may occur through various variables. For example, depression may promote mental illness through stress and anxiety. Reasons for being depressed can be due to a number of things including job loss, recently widowed, divorce, etc. Depression may lead to or increase the frequency of poor habits not promoting physical health. Poor habits may eventually lead to a poor even dangerous lifestyle. The stress of modern day living is causing enormous burden on healthcare globally. Poor eating habits sleep deprivation and sedentary lifestyle has contributed to growth of lifestyle diseases. Lifestyle is the major factor in developing certain diseases.

**Lifestyle diseases**

Lifestyle diseases are diseases that appear to become ever more widespread as countries become more industrialized. Lifestyle diseases are different from other diseases because they are potentially preventable, and can be lowered with changes in diet, lifestyle, and environment. They include Alzheimer's disease,
atherosclerosis, asthma, cancer, chronic liver disease or cirrhosis, Chronic Obstructive Pulmonary Disease, Type 2 diabetes, heart disease, metabolic syndrome, nephritis or chronic renal failure, osteoporosis, acne, stroke, depression and obesity. Certain diseases, such as diabetes or asthma appear at greater rates in young populations living in the "western" way; their increased incidence is not related to age, so the terms cannot accurately be used interchangeably for all diseases.

Lifestyle diseases are a result of an inappropriate relationship of people with their environment. The onset of these lifestyle diseases is insidious, they take years to develop, and once encountered do not lend themselves easily to cure. Diabetes is one of the most common chronic health problems and its prevalence is increasing. While rates of Type 1 diabetes are on the rise, Type 2 diabetes is appearing in children and adolescents and reaching epidemic proportions in the adult population.

**Diabetes Mellitus**

Diabetes is often called the silent killer because people who have it are often unaware they are affected. The normal level of blood sugar in a fasting person is between 80-120mg percent. If the fasting level of blood sugar is more than 110mg percent or after meals more than 160mg percent, it is called high blood sugar (Diabetes Mellitus). In diabetic patients, sugar can be detected in the urine also. Patients with diabetes have a higher chance of development of coronary blockages. They also get several other diseases like kidney damages as well as damage to the nerves and eyes.
In type 1 diabetes, the pancreas fails to produce insulin. Because insulin transports sugar into cells, when a body lacks insulin, its cells starve for energy. In type 2 diabetes, there is plenty of insulin in the body, but sugar still cannot get inside the cells. In both types of diabetes, sugar in the blood becomes very high. As the starving cells repeatedly signal they need more sugar, the body is stimulated to make more sugar, to crave more sugar, and to release more insulin in the blood. With so much sugar in the blood, things can soon go bad. Since bacteria feed on glucose, infections are more frequent. In addition, the blood becomes more acidic, which disrupts the body's pH balance. Fermentation can also be a problem, as yeast grows more easily in high sugar environments. While most cells must manually transport sugar inside their walls with insulin, some cells (such as blood vessel, nerve, kidney, and eye cells) do not. These cells, when overloaded with sugar, cause many of the symptoms associated with diabetes, such as: Blindness, Cardiovascular disease, Kidney failure, and Nerve problems. The amount of sugar in your blood is affected by how many simple sugars taken in, or in other words, what you eat. There are 2 approaches to control blood sugar levels and prevent problems associated with high blood sugar:

- Changing the sugar in your diet
- Improving the transportation of sugars into the cells.

Diabetes mellitus is one of the largest healthcare problems worldwide in term of prevalence, cost and physical and psychological burden it places on individual living with the illness. Diabetes is also one of the most challenging of the chronic diseases from a psychosocial and behavioral perspective. There is no
cure, diagnosis can occur at any stage of life, and after diagnosis daily treatment is required for the remainder of the lifespan, which may or may not successfully prevent the development of serious long term complications, such as cardiovascular and kidney diseases. Every person is concerned about health. Many chronic diseases like diabetes, cancer, cardiovascular diseases are affecting the health of the individual. Chronic illness is the main contributors to disability and death. Diabetes mellitus is a serious condition associated with significant morbidity and mortality because of its short and long-term complications. Diabetes is estimate to cause approximately 41,000 cases of kidney failure, 24,000 cases of blindness and 82,000 amputations yearly. As a chronic condition, diabetes requires lifetime management. This involves a complex daily regimen involving diet, exercise, medication and self-monitoring of blood glucose. It can place considerable psychological and behavioral demands on the individual.

**Incidence of Diabetes Mellitus**

The prevalence of diabetes for all age-groups worldwide was estimated to be 2.8% in 2000 and 4.4% in 2030. The total number of people with diabetes is projected to rise from 171 million in 2000 to 366 million in 2030. The prevalence of diabetes is higher in men than women, but there are more women with diabetes than men. The urban population in developing countries is projected to double between 2000 and 2030. The most important demographic change to diabetes prevalence across the world appears to be the increase in the proportion of people >65 years of age.
World Health Organization (WHO) reports show that 32 million people will be diabetes by the year 2000. The International Diabetes Federation (IDF) estimates the total number of diabetic subjects to be around 40.9 million in India and this is further set to rise to 69.9 million by the year 2025. Total prevalence of diabetes, the data from the 2011 National Diabetes Fact Sheet (released Jan. 26, 2011) 25.8 million children and adults in the United States 8.3% of the population have diabetes. Kerala has a prevalence of diabetes as high as 20% double the national average of 8%. The prevalence is seen as 17% in urban, 10% in the midland, 7% in the highland, and 4% in the coastal regions.

Diabetes mellitus is a condition that is extremely serious from both clinical and public health standpoints. Psychological factors can affect the course of medical illnesses. There is some suggestion that the stress or depression itself may lead to hyperglycemia in diabetics. Anxiety and depression can also affect other conditions including irritable bowel syndrome, headache and skin diseases. Treatment of anxiety and depression may lead to a better medical prognosis and well as a better quality of life. Studies have examined whether stressful events or psychiatric illness might precipitate either Type I (insulin-dependent) or Type II (Non-insulin dependent) diabetes.

Unlike other chronic diseases, diabetes mellitus requires from the patient to care for himself. Dietary restrictions, self administration of hypodermic medication, and urine testings are part of a ritual that involves the daily participation of the individual as well as his use of good judgment in unusual situations. Since the success or failure of diabetic control rests on the patient's ability to put in practice a multitude of requirements, patients with diabetes
mellitus are vulnerable to psychological injury. The most common psychological symptoms encountered in diabetic patients are symptoms of depression, general apathy, decreased self-esteem or feelings of helplessness and hopelessness (Daniels, 1939).

**Personality and Diabetes Mellitus**

People continue to grow and change throughout their lives. Successful adjustment through the life cycle is, after all, mostly a matter of flexibly adapting to the changing demands, opportunities and limitations associated with different stages of life. Nevertheless, a person’s broadly characteristic traits, coping styles, and ways of interacting in the social environment emerge during childhood and normally crystallize into establishing patterns by the end of adolescence or early adulthood. These patterns constitute the individual’s personality. Personality is the unique patterns of traits and behaviors that characterize the individual.

Emotional problems and interpersonal conflicts are factors associated with poor control of diabetes. Patients who accept their illness not overly anxious and acquired better knowledge of diabetes have been found to maintain better carbohydrate control. Unlike other chronic diseases, diabetes mellitus requires from the patient to care for himself. Dietary restrictions, self administration of medication, and urine testing are part of a ritual that involves the daily participation of the individual as well as his use of good judgment in unusual situations. Since the success or failure of diabetic control rests on the patient's ability to put in practice a multitude of requirements, patients with diabetes mellitus are vulnerable to psychological injury. The most common psychological
symptoms encountered in diabetic patients are symptoms of depression, manifested as dysphoric mood, (Daniels, 1939) general apathy, decreased self-esteem, or feelings of helplessness and hopelessness. Patients with diabetes mellitus tend to be anxious, passive, and dependent. They may be overly preoccupied with their health (hypochondriasis) and develop obsessive-compulsive traits as well as a poor self image.

**Stress and Diabetes Mellitus**

Stress is a word derived from Latin word *stringere*, meaning to draw tight. Stress as a person’s response to a disturbance. Stress is a state of mental or emotional strain suffered from fatigue and emotional tension. All situations, positive and negative that require adjustment can be stressful. According to Canadian Physiologist Hans Selye (1976) the notion of stress can broken down further in to eustres (positive stress) and distress (negative stress). In most cases, the stress experienced during a wedding would be eustress; during a funeral, distress. Both types of stress tax a person’s resources and coping skills, though distress typically has the potential to do more damage. Stress is any situation that results in a reaction of the body called the stress response. The stress response is how the body responds to everyday challenges as well as to more threatening or dangerous situations.

Stress is a potential contributor to chronic hyperglycemia in diabetes. Stress has long been shown to have major effects on metabolic activity. Energy mobilization is a primary result of the fight or flight response. Stress stimulates the release of various hormones, which can result in elevated blood glucose levels.
Although this is of adaptive importance in a healthy organism, in diabetes, as a result of the relative or absolute lack of insulin, stress-induced increases in glucose cannot be metabolized properly. Furthermore, regulation of these stress hormones may be abnormal in diabetes. However, evidence characterizing the effects of stress in type I diabetes is contradictory. Although some retrospective human studies have suggested that stress can precipitate type I diabetes, animal studies have shown that stressors of various kinds can precipitate or prevent various experimental models of the disease. Human studies have shown that stress can stimulate hyperglycemia, hypoglycemia, or have no affect at all on glycemic status in established diabetes. Much of this confusion may be attributable to the presence of autonomic neuropathy, common in type I diabetes. In contrast, more consistent evidence supports the role of stress in type II diabetes. Although human studies on the role of stress in the onset and course of type II diabetes are few, a large body of animal study supports the notion that stress reliably produces hyperglycemia in this form of the disease. Furthermore, there is mounting evidence of autonomic contributions to the pathophysiology of this condition in both animals and humans (Surwit et al., 1992).

Psychosocial stress can stimulate the hypothalamus–pituitary–adrenal axis, the sympathetic nervous system and inflammatory pathways known to affect glucose metabolism (Brotman et al., 2007, McEwen B.S., 1998). Psychosocial stress can be considered a product of exposure to a stressor and the human response to it. Thus, several factors are relevant to stress responses, including cognitive appraisals, behavioural coping and the use of social support (McEwen, 1998, Brosschot, 2006). The conceptualisation of social support covers
instrumental support, including both financial and assistance with tasks, emotional/appraisal support, information, companionship and self-esteem support (Graham et al., 2007). Accordingly, several psychosocial categories have been defined: (1) stressful events (e.g. life events, job stress, severe chronic stress and daily stress); (2) stress-prone personality or coping style (e.g. avoidant coping, denial coping, neuroticism, hopelessness); and (3) poor social support (e.g. poor social participation, poor stable partnership, poor family contact, loneliness).

Somatic and psychosocial factors are important both for the treatment and long-term prognosis of diabetes mellitus. Number of psychosocial factors is crucial to cope successfully with the recommended treatment strategies and maintain a good quality of life. These factors are the acquiring of knowledge about self-treatment and skills for its implementation in daily life; emotional and cognitive acceptance of one’s illness; coping with diabetes and its possible consequences in all affected areas of life and in various phases of the illness (e.g., diabetes-specific burdens, acute and diabetes-related complications); identification and modification of behaviours that are obstacles to successful self-treatment; and dealing successfully with crises and/or problems associated with the illness (e.g., mental disorders such as depression, anxiety, and eating disorders) (Petrak et al., 2005).

Being diagnosed with diabetes is a major life stress. It requires a large number of physical and mental accommodations. The individual must learn about a complex system of dietary and medical interventions. Lifestyle, work, and school schedules may have to be altered. This can consume a lot of energy for both the individual and his or her family. Just as important, are the psychological adjustments. One must adjust to a new view of oneself.
Stress can also cause large jumps in blood glucose levels. Panic attacks may resemble hypoglycemic episodes and vice-versa. People respond differently to stressful situations. Given the same subjective level of stress, one diabetic may have a different glucose response from another. Because of this, one should monitor blood glucose more frequently during periods of stress. On the positive side, a conscientious diabetic may have a unique barometer of stress unavailable to the general population.

Many people do not like the idea that they may have emotional difficulties. Some find it easier to attribute everything to physical problems or life circumstances. Good diabetic management is dependent on the development of self-knowledge. Many of the things that other people's bodies do automatically, diabetics must do consciously. This includes closer monitoring of both one's blood glucose and one's emotional state. The wrong life style that aggravates the diabetic state includes excessive indulgence in eating heavy spicy, oily foods and sweets, cigarette smoking, alcohol, non-vegetarian foods, fizzy cool drinks, sedentary lifestyle with no physical activity, excessive sleeping or loss of sleep, emotional upsurges such as aggressive behavior, anger, fear, tension, worry etc. Stress is both the cause and the result of an erratic life style. Stress is a psychological state of emotional reactivity in which the person has no control over the mind. The situations of life style mentioned above are due to lack of mastery over one's cravings or desires or emotional reactions. Thus stress is the cause and the result of all the life style related erratic behaviors.

Exploring the potential role of psychological factors such as stress levels in diabetic patients, belief regarding the causes of diabetes, the availability of
social support, the type of life style or behavior that could impair glycemic control etc will facilitate in enhancing the efficacy of the measurement of diabetes and in minimizing further the risks of adverse complications arising out of diabetes. Diabetes is a disease that results from either pancreatic (beta cell) failure (Type 1 Diabetes) or insulin resistance (Type 2 Diabetes). The number of people with Diabetes in the World would reach 300 million by 2025 (WHO, 2007). Psychosocial issues have long been acknowledged to have a crucial role in the successful treatment of people with Diabetes. An understanding of these issues can enable the individual patients understand their problems effectively. It will further facilitate the health care providers and care givers to address the cognitive, emotional and behavioral issues surrounding Diabetes Management. Hence, health care professionals should explore the potential role of psychological factors by asking open ended questions about stress in patients’ lives, the availability and quality of social support, behavior that could impair glycemic control and patients’ belief regarding the cause of their diabetes, the risk of complications and the possible impact of those factors on the efficacy of their treatment.

Stress has been shown to influence blood sugar control in two ways. Firstly, it can cause the release of stress hormones, which have been associated with hyperglycaemia. Secondly, the experience of stress can interfere with self-care activities, including treatment, dietary and exercise adherence. Everyone experiences stress. A certain level of stress in life is inevitable and can sometimes be beneficial. It is not possible to totally eliminate stress but what is
important is the way stress is managed, in order to control its effects on physical and mental health.

Prolonged psychological stress may negatively impact health, and has been cited as a factor in cognitive impairment with aging, depressive illness, and expression of disease. Stress management is the application of methods to either reduce stress or increase tolerance to stress. Relaxation techniques are physical methods used to relieve stress. Psychological methods include cognitive therapy, meditation, and positive thinking, which work by reducing response to stress. Improving relevant skills and abilities builds confidence, which also reduces the stress reaction to situations where those skills are applicable. Important tools to help minimize the impact of stress can include good sleep habit, regular exercise, a nutritious diet and relaxation techniques.

Stress is any situation that results in a reaction of the body called the stress response. The stress response is how the body responds to everyday challenges as well as to more threatening or dangerous situations. The stress response is also known as the "fight or flight" response. In the stress response, the body pumps up its ability to effectively respond to threats, hardships, and adversity in order to increase its chances of survival. The stress response results in the release of cortisol, a hormone that increases blood glucose levels. The stress response also results in stimulation of the sympathetic nervous system, leading to the release of catecholamines, especially epinephrine (adrenaline). Catecholamines induce vasoconstriction and increases in heart rate and blood pressure. This increases the amount of nutrients and oxygen that is available to the muscles to react to a situation during the stress response.
At the same time, the stress response temporarily suppresses body functions and systems that are not critical to improving the body's readiness to fight or flee. These include the immune system, digestion, growth and reproductive system. Having moderate amounts of short-term stress responses can be helpful in making a person more productive, effective or efficient in everyday life. These stressors, such as having an important exam or a deadline at work, do not last long, and the stress response disappears and the body goes back to normal function after they have passed. This is called acute stress.

Chronic stress such as that from long-term financial hardships or ongoing problems at work or with a relationship, do not give the body a chance to return to normal biological functioning. This can result in a negative impact on health and such symptoms as poor concentration, anger, depression, anxiety, rapid heart rate, palpations and muscle tightness. Over time chronic stress can be a factor in the development of heart disease and type 2 diabetes. For more information on symptoms and complications, refer to symptoms of stress.

Making a diagnosis of stress or stress-related conditions and disorders, such as heart disease, begins with taking a thorough personal and family medical history, including symptoms and questions about the amount and types of stressors a person has. Other factors evaluated include lifestyle, dietary habits, weight, cholesterol levels, blood pressure, symptoms of depression or anxiety, sleep patterns, and smoking/drinking habits. A diagnosis also includes completing a physical examination, which may reveal an elevated heart rate (tachycardia) and blood pressure (hypertension).
STATEMENT OF THE PROBLEM

The topic of the study is entitled as “DIABETES MELLITUS IN RELATION TO LIFE STYLE AND STRESS- AN ANALYTICAL STUDY.”

DEFINITIONS OF KEY TERMS

*Diabetes mellitus*

Diabetes mellitus is a heterogeneous group of disorders characterized by high blood glucose levels (hyperglycemia).

*Lifestyle*

Lifestyle refers to the habits, attitudes, tastes, moral standards, economic level, etc., that together constitute the mode of living of an individual or group. It is a way of life or style of living that reflects the attitudes and values of a person or group.

*Stress*

Stress is a negative emotional experience. According to Colman (2001), “stress is defined as the psychological and physical strain or tension generated by physical, emotional social, economic or occupational circumstances, events or experiences that are different to manage or endure”. Stress is a bodily or mental tension resulting from factors that tend to alter an existent equilibrium (website’s Ninth New collegiate Dictionary, 1988).

*Personality*

Personality is the unique patterns of traits which distinguishes one individual from another.
NEED AND IMPORTANCE OF THE STUDY

Any illness has some psychological impact but in lifelong illness like diabetes it becomes profound. In Kerala the prevalence rate of diabetes is more than 17%. The diabetes leads to very serious and expensive health complications. Diagnosed patients regularly taking medication for prevention of the patients do not continue it because of fear of side effects due to drugs and the extra expenses involved.

Diabetes prevalence is increasing in every country in the world, and the toll is climbing in terms of human lives as well as the costs to society. In 2012, 371 million people, or approximately 8.3% of the world’s adult population, are estimated to be living with diabetes. Kerala is the diabetes capital of India with a prevalence of diabetes as high as 20% double the national average of 8%. In a large multi-center study involving nearly 20,000 subjects, the prevalence of diabetes in Thiruvananthapuram was 17% compared to 15% in Hyderabad and New Delhi, 4% in Nagpur and 3% in Dibrugarh (Mohan et al., 2007, Reddy et al., 2006).

Several studies from different parts of Kerala support the high prevalence of diabetes. One study from central Kerala reported a prevalence of diabetes at 20% and prediabetes at 11%. Another study from southern Kerala, showed a wide urban-rural gradient in age-standardized (30-64 years) prevalence of diabetes indicating an important role of lifestyle factors. The prevalence was 17% in urban, 10% in the midland, 7% in the highland, and 4% in the coastal regions (Kutty et al., 2000).
Complications from diabetes can affect a number of body systems and result in major disabilities. Vascular changes can contribute to myocardial infarction or cerebrovascular accident. Circulation problems can result in peripheral vascular insufficiency so that even minor injuries are prone to become so severely infected that amputation becomes necessary. Deprivation of blood supply to the kidney can result in kidney failures. There can also be changes in the nervous system and changes in the peripheral nerves that result in loss of sensation and pain sensations.

Stress coping and affective regulations are important in management of diabetes. Depression has been shown to lead to failure of adherence to the medical regimen. Improved ability to manage stress has been shown to enhance the management of the disease.

**PURPOSE OF THE STUDY**

The present study tries to investigate differences if any between the type 2 diabetic patients and normals with regard to their personality, lifestyle, and stress tolerance level.

**OBJECTIVES OF THE STUDY**

- To study the differences in personality factors between type 2 diabetic patients and normals
- To find out whether type 2 diabetic patients differ from normals in their levels of stress tolerance.
To study whether type 2 diabetic patients differ from normals in their socio demographic and life style factors.

**HYPOTHESES**

1. There will be significant differences between the type 2 diabetic patients and normals with regard to their personality pattern.

2. There will be significant difference between the type 2 diabetic patients and normals with regard to their stress tolerance level.

3. The five factors of personality will have significant correlation with the level of stress tolerance of type 2 diabetic patients and normals.

4. Type 2 diabetic patients categorized on the basis of socio-demographic variables will differ significantly in their stress tolerance level.

5. Normals categorized on the basis of socio-demographic variables will differ significantly in their stress tolerance level.

6. Type 2 diabetic patients categorized on the basis of lifestyle factors will differ significantly in their stress tolerance level.

7. Normals categorized on the basis of lifestyle factors will differ significantly in their stress tolerance level.

**METHODOLOGY IN BRIEF**

A brief outline of the procedure followed for the investigation is presented bellow. (Detailed description is given in chapter III).
a) **Sample**

The sample of the present study comprises of a group of 100 type 2 diabetic (50 males and 50 females) patients and a group of 100 (50 males and 50 females) normals. The patient group was selected from government and private hospitals in Thiruvananthapuram and the group of normals were selected from the general population. The patient group was selected based on the expert opinion of a general physician and care was taken to see that no to individuals were included with any other diseases like respiratory disorder, cardiatric problems or other psychosomatic disorders in both the diabetic and normal group.

b) **Tools**

The following tools were used for collecting data from the sample.

1. A personal Information Schedule. (Developed by the investigator)

2. Five Factor Personality Inventory.

   (Developed By Dr. Kumary Bhagavathy & Dr.Neelima Ranjith).

3. Stress Tolerance Scale

   (Developed by Reshmy C.S. and Dr.H.Sam Sananda Raj)

c) **Procedure for data collection procedure**

As a first step of the data collection, the investigator identified the patients through clinical assistance from the hospital and also identified the groups of normal from among the general population. After that, the investigator established a good rapport with the subjects to make them feel comfortable. A brief introduction about the topic was given and the tools were administered to them.
individually as per the instruction given in the respective manual. The subjects were requested to make sure that all the items were answered. Scoring was done on the basis of instruction given in the manual.

d)  **Statistical techniques used**

The statistical techniques used for the analysis of the data were the following: t-test, Person product moment method of correlation, one way ANOVA and Duncan test.

**ORGANIZATION OF THE REPORT**

The report of the investigation has been organized in to five chapters. Chapter I introduces the problem under investigation, its need and importance in the present set up, hypotheses formulated for the study and brief outline of the methodology. Chapter II presents the review of related literature, which contains the theoretical details of the variables and relevant studies conducted in this area. Chapter III provides the plan and procedure adopted for the investigation. Chapter IV contains the analysis of the data, the results obtained and interpretation of the results. Chapter V includes the summary of the study and major conclusions. Implications and limitations for the study are also included in this chapter.