AGE, SEX, HEALTH CARE, STRUCTURE OF FAMILY AND ATTITUDE TOWARD LIFE AS FACTORS IN NEURO-CIRCULATORY ASTHENIA

Dissertation Submitted For the Degree of Master of Philosophy in PSYCHOLOGY

BY

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'Of all the wonders that I have yet know, 
It seems to me most strange that man should fear, 
Knowing that death, a necessary end, 
Will come when it will come'

- Shakespeare

(In Julius Caesar)
Chapter One
INTRODUCTION

The study is aimed at assessing attitude of neurocirculatory asthenia patients NCAP towards life in relation to certain sociodemographic variables, such as, sex, age, healthcare, socioeconomic status and structure of family. Assumed to be a vital consideration, 'Neurocirculatory asthenia', like any unhappy physical, psychological situation is understandably a crucial variables, besides others; in determining the attitude towards life. Neurocirculatory Asthenia is, therefore, the major independent variable of the study, believed to be a potential influence in shaping the attitude towards life.

Neurocirculatory asthenia, and for that matter, any of the cardiovascular diseases is viewed with a lot of concern both by the suffering individual and those related to him. Physicians are becoming increasingly aware of the role of emotions in psychophysical illnesses and as a cause of physical distress. More specifically, patients with 'cardiac neurosis' or 'neurocirculatory asthenia' suffer subjectively and may even complain of cardiac dysfunction reflected in various forms of arrhythmia inspite of heart remaining structurally sound.
Studies have also revealed the role the psychological, psychosocial and behavioural mechanisms play in the incidence of cardiovascular disease and coronary heart disease.

It may be noted that psychological factors are important in relation to the diseased heart and that cardiac breakdown could be warded off if the physicians adopt a psychological approach while dealing with cardiac cases with emotional stress (Schecter, 1967).

Since neurocirculatory asthenia is one among the various forms of cardiovascular ailments, under the head 'psychosomatic disorder', it would be in place to explain the term 'psychosomatic', which has a long past but a short history, as is evident from the existing literature.

The psychosomatic approach in medicine is largely based on profound scientific principles or deductive logic which owes to Freud's discovery of the psychoanalytic method, the first method explaining dynamic approach to human personality. This approach puts together the internal physiological processes and the individual's relations to his social environment (Alexander and Flagg, 1965).

**PSYCHOSOMATICS - HISTORY AND CONCEPT**

The term psychosomatic was listed for the first time in a supplement published in 1982, which offers a set of
definition, and defines it as one "involving or depending on both the mind and the body as mutually dependent entities" (Burchfield, 1982, p. 888).

According to Penguin Dictionary of Psychology, psychosomatics is the correlation of psychological phenomena, normal, abnormal or pathological, with somatic or bodily conditions and variations.

The first recorded reference of the term may be found in Read's (1963) 'Hard Cash'. Also, Margetts, while tracing the historic development of the term 'psychosomatic', points out that it was Heinroth (1818), who used it for the first time and sporadic references continued pouring in through nineteenth century literature till 1930s (Margetts, 1950; 1954).

The term psychosomatic does not suggest any dichotomy existing between mind and body. Since psychic phenomena represent the subjective aspects of certain physiological or central nervous system processes, the term should mean a method of approach which is directed towards the simultaneous and coordinated use of somatic and psychological methods and concepts. In some quarters it is viewed as a transitory phase in medicine the utility of which will last till the development of improved physiological or electronic techniques which will take care
of the psychological methods. This premise is credited to those who hold that psychological processes are merely epiphenomena (Alexander and Flagg, 1965).

Further, Zander (1986), argued that the main difficulty regarding psychosomatics in theory and in practice is about the unity of body and soul as opposed to the spontaneous conception of the psyche as an immaterial entity, further pointing out that stress or strain may be the possible factor in physical correlates of neurotic conflicts.

**PSYCHOSOMATIC MEDICINE**

The first statement regarding psychosomatic approach came from Cicero, who proposed that the bodily ailments concurred out of emotional factors. He is credited as the first psychosomaticist (Alexander and Flagg, 1965). And perhaps Deutsch (1922), was the first author to introduce the term 'psychosomatic medicine' (Stokvis, 1959). However, publication of Dunbar's emotions and bodily changes (1935), heralded the currency of psychosomatic medicine.

Used as mutually interdependent entities and acting as an integral unit, mind and body are the two vital components of the psychosomatic medicine, each working as a balancing agent for the other. The new psychosomatic concept has proved to be immensely profitable, generating lot of
meaningful research, though it had remained rooted in the psychological thinking on pathological since ages. The questions as to why an individual suffers from a disease at a certain point of time and what role his personal experience, as also his inherited disposition and conditioning, play in the disease, are of primary importance to psychosomatic medicine. Equipped with this information, the patient may possibly be helped better in making him adjust to the stressful life conditions. It is not that psychosomatics viewed the patient as a whole in discovering the truth about him; rather it was the Greek, who knew and practiced it long ago. However, recent years have witnessed a reversal and down grading of the truth particularly for the phenomenal advancement in the specialised areas and of materialistic medicine which has demonstrated its potential and actual capacity to wiping out the disease by means of virus inoculations and antitoxins (Rehman, 1990).

The systematic surveys in the existing medical literature dealing with the effects of emotions on the general resistance of patients to illness (Dunbar, 1943, 1947a, 1947b and Weiss and English, 1949), contained relationship between emotions and stress on the onset and course of particular disease. These studies led to the investigations of incidence of psychosomatic disease, resulting in such concepts as psychosomatic versus somatopsychic, which were confusing enough.
Included in psychosomatic diseases are physiological dysfunctions and structural aberration that result primarily from psychological processes rather than from immediate physical agents. The term was referred to as Insomnia (Kaplan, 1967) but became associated with wide range of disorders.

**PSYCHOSOMATIC DISORDER**

The disorders, in the understanding of which mental factors are believed to play a vital role, are what we now know as psychosomatics. According to this viewpoint psychogenetic element in such disease has to be treated in interaction with related aspects rather than in isolation. The psychosomatically ill are sick both mentally and organically (Ringel, 1972).

The major categories in which the various ways of reacting to the psychosomatic disorder seem to fall, are: the psychological and the biological. For Buss, (1966), among the main precipitating factors in psychosomatic disorders, anxiety is one. Mirsky (1958), on the other hand, found physiological overreaction to be an important factor in psychosomatic disease. Lacey et al., (1963) proposed a biological theory of psychosomatics specifically directed to emotions which suggests autonomic reactivity to be its inherent constituent. Further, Lacey and Lacey (1958), had shown that the individual variations in the autonomic
reactivity are fairly enduring and are sustainable irrespective of the stress.

Lader (1972), provides an analysis of the relationship between psychophysiological and psychosomatic disorder, in which he emphasizes arousal and responses specifically, and assumes simultaneity of function rather than causal links. This in turn promotes the investigation of the relationship between behavioural and physiological events.

However, controversy pertains to the diagnostic concepts of psychosomatic disease as put forward by Halliday (1943, 1943), which asserts psychological factors to be the primary cause in these diseases.

Moreover, several psychological theories of psychosomatic disorders, which were exemplified by Mahl (1950), find fear and anxiety to be important and as inhibitors of expression of behaviour. The psychological factor is believed to be an important determinant of illness. However, the precise nature of the relationship in psychosomatic disorders between physical illness and psychological states remain vague (Orme, 1984).

Sternbach (1966), views all illness as psychosomatic, with some disease having more obvious emotional aspects than
others. The above findings were seconded by Schemale and Engel (1967) which were in accord with Selye's (1956) proposition.

Fox (1978) also highlighted the role of psychological stress in psychosomatic disorders. According to him, the hormonal demands and the intensity of the emotional state are contributory factors in the development of a particular disease.

Whereas, in the late 1930s and early 1940s, Alexander had come up with a new dimension to psychosomatic research. In separating conversion symptoms from "Stress Response", he proposed that the latter is the response of the body to a long and painful effort to cope up with the bottled up emotional conflict.

The nuclear conflict theory as given by Alexander (1950) maintains that each psychosomatic ailment as also the specific psychosomatic diseases are the outcome of a nuclear conflict which lead to cardiovascular disorders.

With the recognition that function disturbances are due to emotional factors, psychotherapy gained a legitimate entrance into medicine proper. However, the causal connection between psychological conflict and chronic disease was not squarely demonstrated.
CARDIOVASCULAR DISORDER

Representative of this genre of diseases, besides others are hypertension, coronary heart disease and the like. Studies have been conducted to find out the effect of the onset of physical ailments upon personality characteristics of the individual. These studies have been aimed at determining the relationship between a particular disease viz-a-viz, cardiac ailments, cancer etc. and corresponding changes in the personality and temperamental characteristics and to see the temperamental and psychological factors in the causation of these disorders.

Over the years of continuous research, it has been observed that psychological strain or stress, anxiety and emotional disturbances play an important role in the onset of these diseases, particularly cardiac disorders and hypertension.

Heart attack implies a sudden episode rather than a continuing condition. Including a variety of heart disorders, such as cardiac arrest, coronary insufficiency and so forth, a broader synonymous term - Cardiovascular disorder and coronary heart disease seems to cover such conditions and following Coleman (1984), may be designated as the twentieth century epidemic.
Harvey (1628), stated that every affection of the mind is attended with either pain or pleasure, hope or fear & is the cause of an agitation whose influence extends to the heart. However, the precise nature of the link between the mind and heart disease remains to be defined.

Since heart is thought of as the seat of emotional expression, heart beat is synonymous with life as such, and death, the absence of its activity. Hence emotions have a central role (Jenkins, 1979).

After gleaning information from several articles and other varied sources, it has been observed that cardiovascular disorders or heart disease are lethal enough, silently eating into the vitals of human kind, both in the developed as well as the developing countries.

As per statistical records, heart disease since 1930s has been quite conspicuous among the major world health problems, as they account for nearly one million deaths in U.S.A. (Edwards, 1973; May, 1974; Jenkins, 1988).

A recent report of the WHO expert committee shows that as compared to 16% (developing countries), around 48% is the incidence of death in the developed countries (WHO, 1990). Somewhat similar findings have been reported by Stamler (1990).
As the disease has entangled the entire world, in India too, over one million people die of heart attacks every year as is revealed by statistical findings (The Indian Express, 27 October 1990 and Krishnaswami, Joseph and Richard, 1991).

Several factors could be attributed to such distressing statistics. Perhaps one such contributing factor in the development of heart disease is the change of lifestyle, from the slow and sluggish to the fast and strenuous, putting the small stress from long standing conflict, accumulating to the extent of increasing the development of cardiovascular disease manifold.

Osler (1910), at Lumleian lecture, commenting on physicians with angina pectoris, said "... the outstanding feature was the incessant treadmill of practice, and yet if hardwork - that 'badge of our tribe' - was alone, responsible, would there not be a great many more cases? Every one of these men had an additional factor - worry, is not a single case under fifty years of age was this feature absent..."

Stressful conditions or functional stress arising from the struggle for existence have causally contributed to the development of heart disorders (Russek and Zohman, 1958; Russek, 1959; Reiser and Chambers', 1953). Bishop and Buell (1977) reaffirmed the conclusion drawn by the above mentioned psychologists.
A related approach focusses on the possible relationship between an individual's attitude towards stressful situations and the coping pattern he develops (Graham, 1962).

The current interest in the relationship between emotional stress and cardiovascular disease stems from several observations. Firstly, traditional risk factors are absent in more than half of the newly encountered causes of coronary heart disease. Secondly, that psychological, psychosocial conflicts, emotions and patterns of behaviour can and do play an important part in the pathogenesis of certain types of cardiovascular disease. Emotion is repeatedly been found to be associated with one or more factors (Jenkins, 1983).

But even after three decades of intensive research there still is confusion about the nature and reliability of relation between psychological factors and coronary heart disease. However, studies reveal that certain personality variables related to coronary artery disease were anger, anxiety, hostility etc. and results indicate that modest but reliable associations exist between some of the personality variables (Booth, 1987).

**NEUROCIRCULATORY ASTHENIA**

Sustained research activity in the field of medicine, psychological, sociological and in the related fields led
the scientists to believe that not only the organic factors, but also in many cases personal, socio-cultural factors, family factors and so forth, may contribute to the causation of heart disease.

Due to the rapid growth of technological advancement, the shift has been towards the mechanizing system and this shift is witnessed in almost all countries. Besides, poverty, inequality, regional and racial discrimination, and above all, wars created crises of adjustment which adversely affected various aspects of man's life in relation to himself and others. And one such consequence arising from the wars was that of heart disease, particularly neurocirculatory asthenia.

Neurocirculatory asthenia, by its very name implies the role of nervous system and heart in the disorder, the latter playing the central role. In this disease which is thought to be functionally based, the patient complains of heart problem, tainted with palpitation, labile action of the heart, respiratory difficulty and sweating, aversion to physical exertion. But on thorough medical check-up, including ECGs and other records, no organic base is found. Therefore, it is also known as an ill defined syndrome of psychogenic or neurogenic origin (Wood, 1962; 1964 Lachman, 1972).
Moreover, other names given to this disease include, Dacosta's Syndrome', 'Irritable heart of Soldiers', 'Disordered heart action', 'Effort Syndrome', 'Cardiac neurosis' and 'Anxiety neurosis'.

Lowry (1967) traced the development of the concept of hyperventilation which is often mistaken for neurocirculatory asthenia in the clinical medicine.

Wooley (1976), believes that a number of cardiovascular syndromes (essential circulatory hyperkinesis syndrome, the hyperkinetic heart syndrome, the hyperdynamic beta adrenergic circulatory state, and mitral valve prolapse syndrome) are only the latest clinical descriptions of the group of patients who have received a succession of diagnosis over the years, such as effort syndrome, Dacosta's syndrome and so forth. These syndromes appear to be related to the increased responsiveness of beta-adrenergic receptors to epinephrine in these patients, and are benefitted by beta-adrenergic blocking agents.

Schalant and associates (1980), have reviewed a recently identified abnormality of the "mitral valve, mitral valve prolapse, also known as Reid Barlow's syndrome or the floppy valve syndrome. This syndrome was delineated in 1960s' and may be demonstrated with angiography and echocardiography. This disease is perhaps the most common
form of valvular disease in U.S.A having a prevalence of 4% to 6%.

However, the term (NCA) neurocirculatory asthenia as used in the present study owes to Oppenheimer and his associates (1918), to refer to the generalized weakness of the circulatory system. Earlier, neurocirculatory asthenia was thought to be the disorder of civil life, but then the outbreak of world war II was soon followed by numerous studies on NCA (Wittkower et. al., 1941). It was Dacosta (1871) who used the term in a study of soldiers in world war I and entitled the study as 'irritable heart of soldiers'. He concluded that the manifestations were due to functional cardiac disorder.

Since the disorder is usually aggravated due to physical exertion, Lewis and Parkinson (1919) term it as 'Effort Syndrome' by which name it was known throughout the world war II.

The studies indicated that the fundamental cause of in neurocirculatory asthenia is a psychological insecurity and maladjustment. Environmental strain could assist in the development of the disease, such as, removal from family, dislocation of environment and activity, new competitive situations, intense anxiety as well as death fears and death wishes. Likewise, in the civilian life these symptoms may be
aggravated by the situations that appear to produce stress.

Anxiety may be a generalized experience or it may be stimulated by a specific social interaction situation or bodily self concern. It was Freud in 1895 who used the term 'anxiety neurosis' where the chief symptom of heart problem was believed to be anxiety (Orme, 1984; Nemiah and Uhde, 1989).

Wood (1941) discarded these terms in favour of the correct psychiatric diagnosis, but the word 'effort intolerance' was added as it seemed to be a meaningful term. Dacosta's syndrome was also recommended as a useful concept.

Weiss (1942; 1947a; 1947b; 1951; 1953) emphasized the role of prolonged emotional anxiety in the production of chronic disturbances of the cardiovascular system. The symptoms of such anxiety produced heart trouble. He found that emotions like conscious rage and fear can increase blood pressure which consequently develops into cardiac neurosis.

Studies conducted by researchers reveal that sex, age and family history have an important role to play in the onset of disease i.e. neurocirculatory asthenia (Hackett, et.al., 1989). Wittkower, Rodger and Wilson (1941) consider emotional circumstances to be the most common contributory
factor in the onset of the disease. To Friedman (1947), sexual frustration plays primary role in the genesis of the disorder.

Follow-up studies of the cases of neurocirculatory asthenia are difficult to evaluate and compare because cases are not analyzed properly due to differences in criteria of improvement or cure.

Neurocirculatory asthenia as the major independent variable of the study is likely to be an important determinant of attitude towards life, in the sense that attitude towards life, or for that matter, any other aspect of behaviour, are to be viewed in relation to one's belonging to a certain group. Everyone has his special cognitions, violation and behaviour in relation to a specific physical or social situation and so is likely to be distinct from the other. This very fact proves to be an interesting proposition for a researcher like the present one who is concerned with the study of attitude towards life in relation to certain sociodemographic variables viz., age, sex, health care, structure of family, socio-economic status, besides, neurocirculatory asthenia.

ATTITUDE

Attitudes constitute the individual's own evaluation of his conduct and desires in relation to the system of
social values as he understands them. The individual, in order to adjust himself to his physical and social situation has both to form his impression about persons and objects and to evaluate these, besides reacting to the objects and persons he interacts with. With regard to his needs and goals, his likes and dislikes, his rights and duties, his role in society and others expectations of him, he has to make an impression about himself as well. Such impressions one has about one self constitute his self concept. Because the individual's self concept comprises his own impression about himself and what others think about him, an appropriate term, for this may be the 'phenomenal self concept'. This notion of the self as he perceives it may or may not tally with others ideas about him (Mohsin, 1990).

A tendency to look upon one self as an object implies judgement and evaluation on the part of the person of his feelings, cognitions, actions and the idea of himself as a person. One's self-concept, therefore, includes, feeling and attitude in relation to the self. For Lindgren (1973), the term self concept implies attitude towards and conception about one self. McDavid and Harari (1968), used the term self esteem for the evaluative aspect of the self. Whereas Lindgren (1973) defines self-esteem as the amount of value we ascribe to the self.
Thus, we find it useful to conceive of an attitude as a set of related feelings, memories and beliefs about an issue. Both the individual constituent of an attitude and the relations among them can be represented by the associative network notations used by Anderson (1983).

The new models of attitude structure (Dawes and Smith, 1985) depart somewhat from the traditional conception of an attitude as an evaluation. According to this view, which underlies such measurement procedures as Guttman and Thurstone scaling, attitudes are essentially undimensional structure representing an evaluation of an attitude object (Tournngaeu, Reisinski and Andrade, 1991).

Feather (1985) stated, people have attitudes about all sorts of things, from food to policies. Attitude is a relatively stable opinion containing a cognitive element, stereotypes and also an emotional element. Attitudes influence how people see the world and the attributions they make to explain events. These further dispose people to act in certain ways (Tavris and Wade, 1981), Kelly (1967), defined attitudes as opinions and beliefs that a person holds regarding objects, peoples, activities and social practice. Attitudes increasingly connote the psychological rather than the immediately physical orientation of a person, his mental state rather than his bodily stance (Warren and Jahoda, 1973).
To Fleming (1967), attitude is an interdisciplinary term, bridging psychology and sociology. Having social references in its origins and development and in objects, it also has psychological reference seeking into his behaviour and his psychological make-up.

Murphy (1954), stated that the systems of morals and customs in operation is the social attitudes which constitute the matrix of attitude patterns of the individuals in society.

ATTITUDE TOWARDS LIFE AND SOCIO-DEMOGRAPHIC VARIABLES

The onset of a disease, such as neurocirculatory asthenia may have varying effect on different people. The extravert for example, may be transformed into a person who has to enjoy life to the brim, and to avail of every moment of his life with a sense of purpose. There may be an introvert on the other hand, who may succumb to the existing reality and though finding time to engage in life activities may wait for the logical finale of this reality i.e. death.

Sometimes, denial of the fact that one is sick, enables him to deal more effectively with things in life and help cope-up with this reality better. The denial may also be due to one's feeling that his sickness is beyond his coping capacity and that he may succumb to its impact, may lead him to a point of no return back to recovery. Since
beating of heart is indicative of life, any disturbance therein is bound to bring about immediate and far reaching repercussions in terms of psychological health. Hence the importance of the disorder as a possible cause of many a disease and focus of research in psychosomatics.

According to Frankl, (1963, 1965) attitude towards life depends upon the individual's general purpose in life. Moreover, 'will to meaning' is according to him the essence of motivation. He asserts, to have a more positive approach towards life, an individual should be able to find a true meaning even in his sufferings. Then only will he be able to develop more optimistic approach towards life. We also see that the onset of a disease, is the major contributory factor in moulding the general outlook of an individual. It also depends upon his opinion towards his health before and after the development of the disease.

To sum-up, attitude towards life construct refers to existential meaning and purpose in life and strength of motivation to find meaning and purpose. Per se, as well as in the light of studies, Age is the variable that seems to be relevant in the present research. Attitude, besides others, has a developmental aspect too and one may presume that persons at different ages and the same person at the various stages of life, will not have the same attitude.
towards life. Besides, physical growth, that goes with age, what is more important is the concomitant change in the emotional and psychological aspects. Therefore, attitude towards life among the NCA patients and normals is to be assessed in relation to age differences.

Sex too, is a variable generally believed to be a potential source of variation. Justifiably, persons of the two genders are not only different physically, they are so, more psychologically, both depending upon their physical reality as also for the consequences of their respective physical status. Males and females in our society are brought up differently and their attitudes, perceptions and cultural conditioning being not the same, they are likely to have different orientations to various aspects of life. Purpose in life which reflects itself in the attitude we hold about things is one of these and has presumably to be different among subjects belonging to the males and females.

Structure of the family, number of members, their relationship with each other, status in terms of role played in the decision making in crucial domestic affairs and so forth, may be important considerations as far as attitude towards life is concerned.
Attitudes with a cognitive and an affective component is conceived to refer to knowledge and belief as well as emotions and feelings associated with objects and situations. As is obvious, no two persons have the same attitude, opinion or belief about an object, situation, it is likely that in the event of their falling ill their perception of the disease, its nature and intensity will be a function of a number of factors; not only the attitude of the patients but also of members of his family will account for altering and influencing his stance towards the disease. Hence the variable of the nature of the family - Nuclear or Joint - has a special significance in the study.

Health care is also considered to be a relevant variable having to do with attitude towards life. It is generally observed that an individual with a positive attitude towards his health is also more careful and concerned about his health affecting his attitude towards life i.e. he may perceive the world as more purposeful as compared to the one who is careless about his health. The individual who is generally more health-conscious, may react to a likely or actual disease in accordance with his attitudes and beliefs about life and so also is the one who is not that health-conscious.

Fontana, Marcus, Dowds and Huges (1980) speak of psychological health not merely as the absence of
psychological impairment, but rather as separate state making its own contribution to a person's overall psychological well being. However, positive and negative affect represents a major empirical development of this view.

The pathogenic approach views the world falling into the categories of the healthy and the sick, believing at the same time that healthy people are not always healthy and that sick people may pull on with their life activities. Thus health and disease being two points of the same continuum, the approach which represents this proposition is known as salutogenic approach (Antonovsky; 1984).

Further, 'sense of coherence' is the hallmark of the healthy personality. Those who stress this psychological orientation believe their lives to be comprehensive, finding that the world is organized and consistent rather than random and unpredictable.

Tavris and Wade (1987) stated that health and well-being are not just upto an individual but depend upon the people around, such as, family, friends, neighbours and so forth.

The inevitability of death, though recognized generally, one may adopt an attitude of forgetfulness - but with the possible discovery of an illness, one may be
reminded of the dormant fear of the reality of extinction and this fact alone may render the suffering individual into a helpless one, shaping his attitude towards life in a significant way.

To sum up the foregoing orientation to the proposed study, its highlights may be restated, which comprised references to the psychosomatic medicine (the larger domain of the study), Cardiovascular ailments (the Parent disorder of the neurocirculatory asthenia) and Neurocirculatory Asthenia (representative Cardiovascular ailments) and attitude towards life in respect of which the Neurocirculatory Asthenia patients and the control groups are to be compared, along with the other sociodemographic variables. The questions which the present study seeks to answer may be underlined as:

1. Whether the neurocirculatory asthenia patients differ in their attitude towards life from their non-patient counterparts.

2. Whether Neurocirculatory asthenia patients and non-patients belonging to different groups formed on the basis of the sociodemographic variables differ in their attitude towards life.

3. Whether there exist intra-group differences among neurocirculatory asthenia patients and non-patients on attitude towards life.
Chapter Two
REVIEW OF STUDIES

Not much attention has been paid to the disorder specifically from the psychological standpoint, though there exist some studies on the relationship between personality and the Cardiovascular disorders. However, the variables that have been studied in earlier research include those relating to emotional, social and environmental aspects, such as, stressful life events, social conditions, and role of family in the onset of the disease. A look on some related studies would be in place.

Believing that personality factors may be related to Cardiovascular disorder, some researchers have gone to the extent of predicting that Cardiac personality may be out of a disposition to be prone to Cardiac ailment (Dunbar, 1943). She was the first to conduct systematic studies on the relationship between personality and certain organic diseases, concluding that it is often more important to know, "what kind of patient has the disease than what kind of a disease a patient has". The work of Dunbar, gave an inkling to identify specific personality factors associated with a particular psychosomatic disorder.
Dunbar's profile of coronary personality aroused interest among researchers and has been subjected to quite some testing of which the most extensive one was reported by Miles et al., (1951), who made an intensive psychological study of a certain case out of 100 young male coronary patients who had previously been investigated by Gertler and White (1954).

Personality characteristics and cardiovascular disorders have a dual relationship. While psychological factors cause cardiovascular disorders, these, after the onset of cardiovascular disorders, affect the patient psychologically and bring about changes in his personality (Alexander and Flagg, 1965). Fisher (1963) reported various ways in which the relationship between the cardiovascular system and the psychological factors may be studied.

The studies devoted to finding out relationship between personality or psychological factors and cardiovascular ailments may partly be attributed to psychological variables. (Reiger, 1951; Stanley, 1956; Schechter, 1967; Levinson and Fenz, 1971; Clandara, 1972).

Several studies have suggested that psychological factors should be included among the factors to be investigated in longitudinal studies of the development of
the cardiovascular disorders e.g. (essential hypertension, myocardial infarction etc.) originate due to psychogenic factors (Wolman, 1965).

The study by Mordkoff and Parsons (1967), is also relevant which stresses the role of psychological factors in the disorders of the heart on the basis of personality i.e. certain overt personality trait or conscious or unconscious dynamic process are more prone than others to develop coronary artery disease.

**Emotional Factors in N.C.A:**

The relationship between certain emotions and related organs has been seen by Alvarez (1931) and Draper (1924; 1935, 1942).

Schwartz (1940) observed the patients who suffered, besides other diseases, from cardiac neurosis. He suggested that long continued hostility and rage with the consequent production of constant conflict, which he (patient) could not face effectively, resulted in this particular disease.

Strong (1946) studied the role of emotions in the production of cardiovascular disturbances. He found the effect of long continued fear, tension or anxiety in the production of heart condition, particularly neurocirculatory asthenia.
Reise and Chambers (1953) have described that the emotional stress and traumatic life events very often precede cardiac decompensation and congestive heart failure.

Ax (1953), investigated the nervous control of heart function and also studied the correlation between the emotion of anxiety, fear, rage and heart action, their general vascular hemodynamics and their relationship to the autonomous nervous system.

A joint study on 163 normals and 289 patients with cardiac abnormalities was carried out to find out the role of emotional factors in heart disease. Semler, Portland and Orlon (1965) revealed that the emotional stimuli can evoke cardiac symptoms. When anxiety accompanies cardiac disturbances, differentiation of myocardial infarction from neurocirculatory asthenia can be facilitated by recording electrocardiograms as the instant symptoms.

Some researchers view the effect of emotions on the heart as more detrimental than the effect of exercise because of the lack of associated muscular activity as cited by Hackett, Rosenbaum and Cassem (1989).

However, it has been seen that even after three decades of intensive research, there still is confusion about the nature and reliability of relations between psychological factors and coronary artery disease. However,
studies reveal that certain personality variables related to CAD were anger, anxiety, hostility etc. The research indicates that modest but reliable association exists between some of the personality variables and CAD / Kewley and Friedman, 1987).

Some researchers have argued that emotional stress operating in a general, non specific fashion, has etiological significance with respect to 'CAD' i.e. that individuals who eventually develop symptoms of structural heart damage have lived under exceptionally stressful conditions which causally contribute in the development of coronary artery disease (Russek and Zohman, 1958; Russek, 1959). This explanation was seconded by Alexander and Flagg (1965), who asserted that chronic disturbances are not caused primarily by external mechanical or chemical factors but by the continuous functional stress arising during everyday life of his struggle for existence. According to them, fear, aggression, tension, inhibited rage have a special relationship with the cardiovascular system.

**Environmental and Social Conditions in N.C.A:**

Weiner (1977), observed that environmental factors, including diet, social condition, life changes, psychological conflicts and psychophysiological mechanisms play an important role in the etiology of essential hypertension.
Sorri (1979), in discussing the interaction of the social environmental process with human disease in a holistic way, came to the conclusion that psychosocial factors are important in determining human disease.

Borzova (1982) maintains that complicated interactions between the human organism and the environment, which are largely influenced by civilization demands, figure significantly into the increasing incidence of cardiovascular disease. Prevention and intervention should be sought through the study of psychological risk factors and their relations to medical risk factors.

Conti, et al., (1989) conducted a study on 54 patients with neurocirculatory asthenia. He generalized that apart from psychiatric disorder which accounted for 68.5% anxiety disorder; social phobia and panic disorder also accounted for most of the diagnosis. Similar results were reached by Beitman et al. (1990). Goldberg, Morris, Christian, Badger, Chabot and Edlund (1990), in a separate study reaffirmed the above result.

Stressful Life Events:

Bhargava, Sharma and Agarwal (1982) administered the Social Readjustment Rating Scale to 37 coronary heart disease patients and 30 healthy controls. They observed that the major change in "work responsibility" and "death of a
close relative" occurred significantly more frequently in the patient group than in the normal controls.

Researches conducted to find out the influence of social, environmental, stressful life events, led to the revelations, that the changing life events and the perception of these events by the patients plays an important role in the onset of the disease and in the treatment of the same.

Siegrist and Dittmann (1981) examined the stress effects of life changing events in 380 myocardial infarction patients and 190, age and occupation matched controls. The 380 heart attack patients (ages 30-55 years) and the controls were administered on an inventory of stress effects of such life events as loss or change of job, death in the family, accident, dissolution of an intimate relationship, family conflict, financial losses. Each reported life change events was rated on a 44 point stress scale. They observed that the heart attack patients did not initially perceive their life changes as more stressful than did control subjects but that the cumulative stress effects of their life events had eroded their defenses and coping strategies.

Narottam, Ahuja and Madhukar (1982) administered a life event inventory to 54 Indians suffering from essential hypertension and to 54 controls, matched for age, sex and socio-economic status. Hypertensives reported more life
events than controls. Subjects ratings of the degree of happiness or distress invoked by their life events, revealed that the hypertensives had significantly more number of distressing events. The latter relationship was particularly strong in males over the age of 45 years. Many distressing events for these males seemed to be particularly pathogenic.

Flager (1983), reviews empirical evidence concerning the contribution of life changes and the coronary-prone behavior pattern in the development of cardiovascular disease, in particular (Myocardial infarction) in the middle adulthood. He argued that an organic model may better predict the pathogenic development of distressing psychosocial risk constellations over consecutive phases in the life course of the heart patient.

Further, a study was conducted by Kalinke, Kulick and Heim (1982) where numerous bloodpressure measurements were taken in various situations by approximately 120 essential hypertensives (18-57 years) to acquaint subjects with their own blood pressure variability, to help them understand psychologically induced bloodpressure variation, and to encourage them to cope with their hyper reactivity in general and in response to specific stress. The subjects who were given the opportunity to learn to relax and to cope with stressful life situations showed promising bloodpressure reduction after treatment and at follow-up one year later.
Cumes, (1983), studied the degree of self-disclosure in borderline and hypertensive individuals using a checklist of personal concerns. Fifty (17 to 78 years old) shoppers who sought blood pressure measurements in a heart display had B.P. measured before and after the completion of the checklist. Subjects with elevated B.P. did not disclose as many personal concerns as normotensives and were less likely to report feeling stressed after the cognitive task even when blood pressure increases had occurred, thus suggesting that the hypertensives' physiological response has a direct link with cognitive and perceptual coping styles related to disclosure.

Substantial evidence exists to indicate associations between psychological stresses and coronary artery disease, hypertension, and the like, but the intervening variables that mediate pathological changes have yet to be subjected to rigorous study (Cf. Hackett, Rosenbaum and Tesar, 1988).

Role of Structure of Family in N.C.A:

Besides, among other socio-demographic variables, structure of family is also believed to be one of the major contributory factors in the onset of the disorder.

Brown (1942), in carrying out a comparative study on patients suffering from anxiety neurosis with a group of controls, found that the development was randomly scattered to any position in the family. He pointed out that 53% of
the parents of patients with anxiety state were abnormal as compared with 19% for the control groups. Of the parents of anxiety neurosis, 21% suffered from anxiety neurosis. However, there was no significance of difference between mothers and fathers in incidence of the disorder. 12% of the siblings of anxiety neurotic parents were found to have anxiety neurosis, while 17% were found to have anxious personalities.

A study conducted by Wheiler, White, Reed et al., (1948) demonstrated a prevalence of neurocirculatory asthenia in the children of parents having this disorder. 38% of the children with either of the parents suffering from this disorder and 62% of the children, where both parents suffered from the disease showed the disorder.

Cohen and his associates (1951), after surveying the literature from 1869 to 1948, supported the idea that the disorder runs in the families. However, he did not comment on the familial prevalence of the acute neurocirculatory asthenia. They studied familial prevalence of this disorder, finding a highly significant excess frequently of neurocirculatory asthenia in parents, siblings and families of patients and chronic neurocirculatory asthenia, and significantly more mothers than fathers were affected.
Luban, Plozza and Comazzi (1972) carried out a study to find out if family plays any role in psychosomatic disturbances. They concluded that consistently evading the life affecting issues lead to family neurosis in the long-run and that the isolated sick person can show signs derived from a disturbed family relationship, particularly through psychosomatic disorders.

A study was conducted by Cermak (1973) who confirmed the existence of definite relationship between the condition of family circle and the psychosomatic illness. Moreover, he emphasized the aftercare of the patient for speedy and early recovery. Woodruff, Goodwin and Guze (1974) assert that anxiety neurosis runs in the family.

Role of Age, Sex in N.C.A:

Studies conducted by several researchers reveal that sex, age and family history have an important role to play in the onset of cardiac neurosis. They stated that the disease occurs more often in women than men, the ratio being 3:2 and occurs more often between the ages of 20 and 40, though it can occur at any age. In addition, functional cardiovascular symptoms are common among the parents and siblings of patients with neurocirculatory asthenia. There also appears to be a high family incidence (Cf. Wood, 1941; 1962; Friedberg, 1966; Lachman, 1972; Hackett et al., 1989).
Studies reveal that the children with psychosomatic illnesses differ from normal children in about the same way as psychosomatic adults differ from normal adults (Ames et al., 1952).

Miller (1965), while studying the psychological correlates of coronary artery disease found that people of young age group were more psychologically disturbed than older aged ones.

Burdick, Van Dyck and Von Bargen (1982) studied the cardiovascular variability and introversion/extraversion, neuroticism and psychoticism, of 48 subjects during a 10 minute rest period for pulse wave velocity and heart rate level and variability. The subjects were also evaluated by means of the neuroticism, psychoticism, the lie and Intro-extraversion subscales of the Eysenck Personality Questionnaire (EPQ). It was found that factor analysis identified five factors that accounted for 80.6% of the variance, cardiovascular lability, Heart-rate, time trends, sex effects and self-reports. The EPQ measurements, separated from the psychological measurements in the factor analysis, were found to be insignificantly loaded on any physiological correlations were found with neuroticism, adding a possible blood pressure and heart rate descriptor to neuroticism.

Jorgensen and Houston (1986) examined 122 undergraduates' to find out if certain personality
characteristics in combination with a family history for essential hypertension are associated with excessive cardiovascular reactivity. They observed that the undergraduates who differed in the patterns of their personality characteristics were identified within normotensives with a positive family history of essential hypertensive and within normotensives with a negative family history of essential hypertension via cluster analytic techniques. Further, a subgroup of subjects with positive family history, characterized by denial and unwilling to admit to neurotic feelings or aggressiveness, exhibited exaggerated blood pressure reactivity.

Further, Nutzinger et al. (1990), taking into consideration the socio-demographic factors (e.g. marital status, educational qualifications and also interpersonal relations) of 36 patients having cardiac phobia, revealed that educational level, being single and difficulties and conflicts in the interpersonal relations were associated with poor prognosis.

Medically-Oriented Studies:

Certain studies carried out in medical setting may be reviewed to gain an understanding of the disease, especially neurocirculatory asthenia.
Wearn and Colleagues (1919), administered epinephrine to soldiers manifesting symptoms of Dacosta's syndrome and compared them to normal controls. The normal subjects were not reactive to epinephrine, the soldiers with long standing 'irritable heart', 59% developed a characteristic reaction of restlessness, nervousness, palpitation and so forth, which duplicated the symptoms noted after exertion of hyperventilation. The results were corroborated by Lundaman et al. (1940).

A follow-up study of 601 former soldiers with NCA was conducted by Grant (1925) about seven years after the discharge from hospital. Approximately 15% were free of symptoms, another 15% improved and over 50% unchanged. Relatively poor results were reported by Parkinson (1918) and Jones and Lewis 1941, whereas others reported remarkable therapeutic results as measured by the percentage of patients returned to military duty.

Soley and Shock (1938) carried out a study to find relationship between hyperventilation and neurocirculatory asthenia. After studying under these diagnostic categories involving biochemical and psychological components respectively, they concluded that the appropriate diagnosis for this condition might be "anxiety states with hyperventilation syndrome".
During World War II White and Cohen (1951), with their associates, demonstrated in the Army Fatigue Laboratory that anxiety had significantly greater evaluations of blood lactate during standard exercise texts. Later, Pitts (1979) carried out studies to find out the consequences of infusing lactate in anxiety neurotics and normal subjects.

Pitts and associates (1979), in reviewing the available data, concluded that the mechanism of expression of symptoms in pathologic somatic anxiety in men involves hyperactivity or hypersensitivities, somewhere in the chain of events mediated by beta adrenergic agonists.

The review of the foregoing studies was intended to present the kind of research that has been devoted to the psychosomatic disorders, and within that with cardiovascular ailments, with particular reference, direct or by implication, to neurocirculatory asthenia, in order to bring out the importance of the present investigation, the major concern of which is 'attitude towards life' which remaining conspicuously unrepresented in literature, accords added significance to the variable and justifying its assessment among the neurocirculatory asthenia patients in comparison to their non-patient counterparts.
Chapter Three
METHOD AND PLAN

The methodology and plan were worked out in accordance with the objectives of the study which consisted in a comparative assessment of attitudes toward life among the neurocirculatory asthenia patients and a control group of normal subjects in relation to certain demographic variables - age, sex, socioeconomic status, structure of family - and the variable of health care.

SAMPLE:

There were two possible ways in which an appropriate sample for the study could be drawn:

(a) Approaching the patients about whom prior information was available as to their complaint related to some kind of cardiovascular disorder and ascertaining this from the patients' close relatives and their physician's prescriptions. Then, from among a large number of such cases, identifying and retaining those ones qualifying for the neurocirculatory asthenia category.

(b) Relying on the diagnostic classification of the physician, i.e. picking up patients from the O.P.D. J.N. Medical College Hospital, Aligarh Muslim
University, Aligarh who were detected positive for neurocirculatory asthenia (NCA).

Although the first alternative could potentially be a better source in terms of providing primary information but it involved practical difficulties and hence dropped in favour of the second, viz. physician's assignment of patients to the NCA class.

Accordingly, subjects for the study were selected from the referred O.P.D patients at the Medicine Section of J.N. Medical College, A.M.U., Aligarh. The size of the sample was determined by the factor of availability of N.C.A. patients. Initially, a large number of subjects were approached but the final sample retained, comprised, 100 NCA patients with many having been excluded for want of fulfilment of the requirements of purposive sampling and to ensure greater homogeneity and representativeness of the sample, as also to minimize the possible interplay of certain extraneous variables on the dependent variable.

Certain inclusion and exclusion criteria were applied to get a well defined sample of NCA patients. The possible sources of variation in the dependent variable were infact the inclusion criteria. These comprised: Age (20-55 yrs), Sex (Male/female), Socioeconomic status (UMSES/LMSES). Subjects whose monthly income or of those on whom they were dependent was not less than ₹ 2500 were included in the
lower middle socioeconomic status (LMSES) category and those with not less than Rs 4000 were considered to represent the upper middle socioeconomic status (UMSES) group. Whereas in the case of LMSES the factor of profession presupposed that the subjects were office assistants, semi literate, petty shop owners, laboratory assistants and the like of their sons and daughters, in the case of the upper middle socioeconomic status group, the subjects or their Father/Mother were Doctors, Engineers, Professors, Advocates, Office Executives, University teachers etc. Structure of family had to do with the type of family (Nuclear/Joint) subjects belonged to and health care was considered in terms of Ss' being careful or careless about health. Of course, the major inclusion criterion was patients complaint of NCA for a duration of atleast two years, back from the time of encounter with the investigation.

Some of the exclusion criteria used in drawing the required sample were irregular history of NCA, less than two years duration of NCA, presence of some other significant physical ailment, history of mental illness and lack of cooperation for the study.

The study also aimed at comparing the clinical sample of NCA subjects with a control group to look for the possible difference between these groups on attitudes toward life. This was to ascertain the extent to which the state of being sick or not was related to the attitudes toward life.
A comparable sample of subjects, equal in numerical strength to the clinical sample of NCA patients (i.e. N=100) was selected following the group-matching technique. The control group fulfilled the requirements of being free from NCA or related disorders and was matched on age, sex, structure of family, locale, socioeconomic status, and health care.

For the analysis, the sample size was reduced to 80 subjects in each group which were randomly selected from the total sample size for the proper representation of the total sample, as also to suit a more controlled handling of data i.e. working out cells with equal number of cases in each of their statistical treatment. Thus the total sample comprised 160 subjects, half of which being NCA and the other half non patients (control group).

**MEASURES USED**

(a) **LIFE ATTITUDE PROFILE:**

The main test used in the study, viz, Attitude toward life (ATL) is based on Purpose in life test (PIL), (Vicktor Frankl, 1963) which maintains that the primary motive in man is "the will to meaning" (Crumbaugh and Maholick, 1969) that attempts to measure the degree to which individuals have found meaning and purpose in life. Subsequently, Crumbaugh: (1977) developed the Seeking of Noetic-áls (SONG) test as a measure of the strength of motivation to find meaning and
purpose in life. Together, the PIL and SONG were viewed as a measure of two complementary dimensions of life attitudes. A factor analytic study of the PIL and SONG by Reker and Cousins (1979) confirmed the complementary nature of the two instruments and in addition provided evidence for the multidimensional nature of the life attitude construct through the identification of 10 interpretable independent dimensions.

Life Attitude Profile (LAP) (Reker and Peacock, 1981) seemed to be the most appropriate measure for assessing the dependent variable—Attitude toward life (ATL) and hence adopted.

Like the PIL— the LAP is also a multidimensional measure of attitudes toward life assessing the degree of existential meaning and purpose in life and the strength of motivation to find meaning and purpose. The latter, adhering to Frank's (1963) theory of logotherapy, with its simplicity and its ease of administration, makes it a valuable, attractive and practical tool. And on these counts the measure was chosen.

In the original study (Reker and Peacock, 1981) the internal reliability estimates for the factor scales ranged from .56 (future meaning to fulfil) to .83 (Life Purpose). Convergent-discriminant validity coefficients were also reported for a number of the LAP factors.
Based on Likert's 7-point scale, the LAP scale contains 44 items having seven heads or columns - "Strongly Agree" to "strongly disagree" with scores ranging from 7 to 1 and comprises seven components, viz- (a) Life purpose, (b) Existential Vacuum, (c) Life control, (d) Death acceptance, (e) Will to meaning, (f) Goal seeking, (g) Future meaning to fulfil. A high total score on each of life event is indicative of a positive attitude and the maximum score an individual can get is 308 (44x7) and the minimum score of 44 (44x1).

HEALTH CARE MEASURE:

Health Care, was another independent variable which was not like other demographic variables and had to be manipulated to identify the health conscious and health carefree individuals. Since it would not be possible to classify the subjects into different categories as was done with other independent variables - Age, Sex, SES and structure of family the investigator had to develop a measure for this purpose. It consists of a list of 30 items, 15 were representative of health consciousness and 15 of health carelessness. Each item has five response categories, ranging from 'Strongly Agree' to 'Strongly disagree' with intermediate columns as 'Moderately Agree', 'Can't Say' and 'Moderately disagree'. The list of items were placed in random order to avoid any guessing on the part of the subject.
The scoring of items was done as follows: The items which were representative of health consciousness would get a score of '5' if answered "Strongly Agree" and '1' if marked "Strongly disagree," other intermediate responses would get scores accordingly. The items reflecting attitudes of carelessness toward health would be scored in reverse order, i.e. "strongly disagree" would get a score of '5' and "Strongly Agree" a score of '1'. The maximum score that an individual can get on this questionnaire is 150 and the minimum 30.

PROCEDURE:

The investigator had to seek the help of doctors (physicians) by way of allowing her access to the patients at the O.P.D, which they were made to rather reluctantly, to begin with. Their initial apprehension to accept whom they perceived as intruder into their area and an outgroup, was somewhat reduced by the frequent visits of the investigator and impressing upon them the indispensability of their services towards the cause of human suffering to which they were also committed. They also helped in letting the investigator collect further information from the patients. They were good enough to introduce the investigator to the patients as one of their colleagues. This in fact made things pretty easier for the investigator.
To gain further understanding regarding the NCA patients' attitudes toward life, the measure of study was administered after establishing rapport with them and ensuring their maximum cooperation by giving them a word of honour, that their responses would be known to the investigator alone and that these were meant for research purpose. Thus, after making the subject feel comfortable, they were given the list of items and were instructed to put a check (✓) mark against each item in the column that best represented his/her opinion or feeling. Subjects were also provided with health care measure and were given instructions accordingly. The time taken by each respondent to fill in the questionnaires came to about an honour and was done in one sitting only.

The investigator used to sit in the outdoor clinic for 3 to 4 hours daily to study the NCA patients, but on certain days she was kept waiting as none turned up. Moreover, to find out whether the clinical group was any different in attitudes toward life from their normal counterparts, an equated sample comprising of 100 subjects with no reported psychological or heart problems, was drawn from the general population of Aligarh. Of the total sample drawn, 200 subjects (Normal =100; NCA patients =100) constituted the sample representing the variable of sex, (Male: 50; Female: 50), Age (Older: 50; Younger: 50) SES
Structure of family (Joint: 50; Nuclear: 50), Healthcare (Healthcareful: 50; Healthcareless: 50). The phase of data collection lasted about eight months.

**Statistical Analysis:**

Keeping in view the main objectives of the present study, the statistical technique that seemed to be the most appropriate was Analysis of variance to determine the effect of certain sociodemographical variables on the attitudes toward life of NCA patients and their normal counterparts. However, there was one problem in making use of a complex factorial design involving six variables each of two levels. The problem was that the factorial design involving all the variables would have as many as 64 cells which was not manageable as also there was the possibility of unequal distribution of the subjects in these cells. It was therefore, decided that the variables which do not have significant impact on the dependent variable are identified using 2x2 factorial design so that in the final analysis of data the categorisation based on the variables which have no significant impact, are ignored. In the initial 2x2 analysis of variance, first variable was taken to be health status which was paired with other variables one by one.
2x2 ANOVA's led to the discovery that variables of sex and structure of family had an insignificant impact on the dependent variable, and for this reason the subjects who were categorised on the basis of these variables need not be treated separately. Even after ignoring these two variables structure of family and sex. This was yet to be reduced further as 2x2x2x2 design could not be employed due to three reasons:

i) There would not be sufficient number of subjects for each of 16 cells.

ii) A third order interaction is difficult to interpret.

iii) The purpose of this study was to find what are the variables which affect patients attitudes toward life; the non patients (control group) was employed to find out whether the same variables had an impact on attitudes toward life in that group as well. This purpose of the study can well be served if two separate ANOVA's are carried out using 2x2x2 design; one for the patient group and the other for the non-patient (control group).
The following hypotheses were formulated for being verified.

1. Compared to the NCA patients, the non-patient group has a more positive attitude towards life.

2. Younger NCA patients rather than older ones have a more positive attitudes toward life.

3. Male NCA patients' attitudes toward life is more positive than that of female NCA patients.

4. NCA patients belonging to the UMSES group have a more positive attitude towards life than those belonging to the LMSES group.

5. Health careful rather than Health carefree NCA patients have a more positive attitude towards life.

6. NCA patients living in joint families have a more positive attitude towards life than those living in nuclear families.

7. Compared to older non-patient subjects, younger non-patient subjects have a more positive attitude towards life.
8. Male non-patient subjects have a more positive attitude towards life than female non-patient subjects.

9. Non-patient subjects belonging to UMSES group have a more positive attitudes toward life than the LMSES non-patient subjects.

10. Health careful non-patient subjects have a more positive attitude towards life than health careless non-patient subjects.

11. Non-patient subjects living in joint families have a more positive attitude towards life than those living in nuclear families.
Chapter Four
RESULTS

Since the purpose of the present study was mainly to assess the 'Attitudes towards life' among neurocirculatory asthenia patients (NCAps') and non-patient group, a statistical technique which could bring out clearly the role of the demographic variables in the differences between the two groups on Attitude towards life was required. And ANOVA seemed to be a potentially useful technique and so was employed.

As stated earlier (cf. Chapter-III), the ANOVA was varied out in two phases just to ascertain the role of demographic variables i.e. Independent variables as source of variation in the dependent, these were dropped and were not included in the later analysis of variance, which was confined only to variables found to be operating in the difference in Attitudes toward life.

ANOVA while providing information about the influence of the Independent variables on attitudes toward life did not indicate the direction of difference which had to be determined on the basis of the Means on the dependent variable of the comparison groups worked out in respect of each of the demographic variables viz. age, socioeconomic status, sex, structure of family and Health care.
The abbreviations, LAP, ATL, SES, UMSES, LMSES, JF, NF, HC, HCL, HCF and NCA, stand respectively for life attitude profile, Attitude towards life socioeconomic status, upper middle socioeconomic status, lower middle socioeconomic status, Joint family, Nuclear family, Heath care, Health careless, Health careful and Neurocirculatory asthenia.

The results of the analysis of variance relating to the first phase of analysis are presented in Tables I-V. Mean LAP scores of the comparison groups i.e. NCA and Normal subjects on the demographic variables are contained in Tables VI, VII & VIII. The results of ANOVA relating to the second phase of analysis are in Table IX and whereas Mean scores of the NCAps' on the variables of SES and Mean scores of the Normal subjects on the variables of Age, SES and HC are in Tables IX & XI graphical representation of the data appears in Fig. 1-4.
A perusal of Table-1 indicates that main effects of health status and Age are significant (P<.01). The interaction of two variables is also significant (P<.01). This finding shows that attitudes toward life of the subjects who are healthy (control group) and who are suffering from neurocirculatory asthenia disease are different. The means of the two groups on the measures of Life Attitude Profile (LAP) indicate that attitudes of normal healthy subjects is more positive than the
attitudes of NCA patients. Mean LAP scores of NCAp's = 194.37; Mean LAP scores of normal group = 225.31) (cf. Table-VI).

The significant main effect of age shows that mean LAP scores of the younger and older age groups are different (Mean of Younger age group = 216.61; Mean of older age group = 203.07) (cf. Table-VI) which indicate that the younger age group has a more positive attitudes toward life than people of older age group.

The interaction between age and health status indicates that the effect of one variable on attitudes toward life is dependent upon its combination with one of the other level of the other variable. Considering the mean LAP scores of the four groups i.e. (Mean LAP scores of Younger age group of NCAps' = 196.74; Mean LAP scores of Older age group of NCAps' = 192.00; Mean LAP scores of Younger and Older age group of Normal Subjects = 236.48; 214.14 (cf. Tables VII & VIII), it can be observed that differences in Age lead to greater difference in LAP in the case of normal subjects than in the case of NCA patients.
Table-II: Summary of 2x2 ANOVA for variables of health Status and SES.

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean Sum of squares</th>
<th>F-value</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Status</td>
<td>47864.18</td>
<td>1</td>
<td>47864.18</td>
<td>78.06</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>SES</td>
<td>22429.62</td>
<td>1</td>
<td>22429.62</td>
<td>36.58</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Between treatment</td>
<td>72857</td>
<td>3</td>
<td>24285.69</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Status X SES</td>
<td>2563.28</td>
<td>1</td>
<td>2563.28</td>
<td>4.18</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>Within treatment Error</td>
<td>20171.8</td>
<td>196</td>
<td>613.12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>199</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

The perusal of Table-II indicates that main effects of health status and socioeconomic status (SES) are significant (P<.01). The interaction of the two variables is also significant (P<.05). In this finding the significant main effect of SES shows that LAP mean scores of the upper middle socioeconomic status (UMSES) (Mean of UMSES =220.43; Mean of LMSES =199.25, cf. Table-VI) which indicates that people belonging to upper SES have more positive attitudes toward life than those belonging to lower socioeconomic status.
The interaction between SES and health status indicates that the effect of one variable on ATL is dependent upon its combination with one of the other level of the other variables. Considering the means of the four group i.e. (Mean LAP scores of Upper and Lower middle class of NCA patients, 206.38; 187.36; and Mean LAP scores of Upper and Lower middle SES of normal subjects, 239.48; 211.14, cf. Tables VII & VIII), it can be observed that differences in SES lead to greater difference in LAP in the case of normal subjects than in the case of NCA.

Table-III: Summary of 2x2 ANOVA for variables of Health Status and Health Care.

<table>
<thead>
<tr>
<th>Source variation</th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean Sum of squares</th>
<th>F-value</th>
<th>P &lt; .01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health variation</td>
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<td>47864.18</td>
<td>140.84</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Health Care</td>
<td>6407.12</td>
<td>1</td>
<td>6407.12</td>
<td>18.85</td>
<td></td>
</tr>
<tr>
<td>Between treatment</td>
<td>55531.32</td>
<td>3</td>
<td>18510.44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Status X GC</td>
<td>1260.02</td>
<td>1</td>
<td>1260.02</td>
<td>3.707</td>
<td>NS</td>
</tr>
<tr>
<td>Within treatment</td>
<td>60608.56</td>
<td>196</td>
<td>339.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>199</td>
<td></td>
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</tbody>
</table>
The above table indicates that main effects of health status and health care are significant (P < .01) but the interaction of two variables is insignificant. The significant main effect of Health care shows that LAP mean scores of Health care people are different from Health careless one's. Mean scores of HCF = 215.50; Mean of HCL = 204.18 (cf. Table VI) which indicate that health careful group have a more positive attitudes toward life than health careless people. Mean LAP scores of HCF and HCL of NCAp's groups = 202.54 / 186.2 = 222.16; normal subjects = 288.46 / (cf. Table VII & VIII). It can be observed that difference in health care lead to greater difference in LAP in the case of NCA patients than in the case of subjects. normal subjects.

Table-IV: Summary of 2x2 ANOVA for variables of Health Status and Structure of family (ST of family).

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Sum of squares</th>
<th>F-value</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Status</td>
<td>47864.18</td>
<td>1</td>
<td>47864.18</td>
<td>96.05</td>
<td>P &lt; .01</td>
</tr>
<tr>
<td>ST of family</td>
<td>269.12</td>
<td>1</td>
<td>269.12</td>
<td>0.54</td>
<td>NS</td>
</tr>
<tr>
<td>Between treatment</td>
<td>48163.72</td>
<td>3</td>
<td>16054.57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Status X ST of family</td>
<td>30.42</td>
<td>1</td>
<td>30.42</td>
<td>0.06</td>
<td>NS</td>
</tr>
<tr>
<td>Within treatment</td>
<td>97669.16</td>
<td>196</td>
<td>498.31</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total 199
It is evident from the above table that main effect of health status is significant \((P<.01)\) whereas the main effect of structure of family is insignificant.

**Table-V:** Summary of 2x2 ANOVA for variables of Health Status and Sex.

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean Sum of squares</th>
<th>F-value</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Status</td>
<td>47864.18</td>
<td>1</td>
<td>47864.18</td>
<td>63.00</td>
<td>P&lt;.01</td>
</tr>
<tr>
<td>Sex</td>
<td>598.49</td>
<td>1</td>
<td>598.49</td>
<td>0.78</td>
<td>NS</td>
</tr>
<tr>
<td>Between treatment</td>
<td>48889.09</td>
<td>3</td>
<td>1629.36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Status X Sex</td>
<td>426.42</td>
<td>1</td>
<td>426.42</td>
<td>0.56</td>
<td>NS</td>
</tr>
<tr>
<td>Within treatment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td>148895.79</td>
<td>196</td>
<td>759.67</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>199</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It may be seen from the above table that except for health status variables, all other F-values are insignificant \((F<.01)\).
Table VI: Mean LAP scores of subjects belonging to different groups

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>X</th>
<th>Total N=200*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>100</td>
<td>225.31</td>
<td></td>
</tr>
<tr>
<td>NCA</td>
<td>100</td>
<td>194.37</td>
<td></td>
</tr>
<tr>
<td>Young Age</td>
<td>100</td>
<td>216.61</td>
<td></td>
</tr>
<tr>
<td>Older Age</td>
<td>100</td>
<td>203.07</td>
<td></td>
</tr>
<tr>
<td>UMSES</td>
<td>100</td>
<td>220.43</td>
<td></td>
</tr>
<tr>
<td>LMSES</td>
<td>100</td>
<td>199.25</td>
<td></td>
</tr>
<tr>
<td>HCF</td>
<td>100</td>
<td>215.50</td>
<td></td>
</tr>
<tr>
<td>HCL</td>
<td>100</td>
<td>204.18</td>
<td></td>
</tr>
</tbody>
</table>

* No. of subjects used in ANOVA (1st Phase)

Table VII: Mean LAP scores of normal subjects belonging to different groups.

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young Age</td>
<td>50</td>
<td>236.48</td>
</tr>
<tr>
<td>Old Age</td>
<td>50</td>
<td>214.14</td>
</tr>
<tr>
<td>LMSES</td>
<td>50</td>
<td>211.14</td>
</tr>
<tr>
<td>UMSES</td>
<td>50</td>
<td>239.48</td>
</tr>
<tr>
<td>HCL</td>
<td>50</td>
<td>222.16</td>
</tr>
<tr>
<td>HCF</td>
<td>50</td>
<td>228.46</td>
</tr>
<tr>
<td>Joint Family</td>
<td>50</td>
<td>224.54</td>
</tr>
<tr>
<td>Nuclear Family</td>
<td>50</td>
<td>226.08</td>
</tr>
<tr>
<td>Female</td>
<td>50</td>
<td>225.04</td>
</tr>
<tr>
<td>Male</td>
<td>50</td>
<td>225.58</td>
</tr>
<tr>
<td>Group</td>
<td>N</td>
<td>X</td>
</tr>
<tr>
<td>---------------------</td>
<td>---</td>
<td>-------</td>
</tr>
<tr>
<td>Young Age</td>
<td>50</td>
<td>196.74</td>
</tr>
<tr>
<td>Old Age</td>
<td>50</td>
<td>192.00</td>
</tr>
<tr>
<td>LMSES</td>
<td>50</td>
<td>187.37</td>
</tr>
<tr>
<td>UMSES</td>
<td>50</td>
<td>206.38</td>
</tr>
<tr>
<td>HCL</td>
<td>50</td>
<td>186.2</td>
</tr>
<tr>
<td>HCF</td>
<td>50</td>
<td>202.54</td>
</tr>
<tr>
<td>Nuclear Family</td>
<td>50</td>
<td>195.92</td>
</tr>
<tr>
<td>Joint Family</td>
<td>50</td>
<td>192.82</td>
</tr>
<tr>
<td>Female</td>
<td>50</td>
<td>191.18</td>
</tr>
<tr>
<td>Male</td>
<td>50</td>
<td>197.56</td>
</tr>
</tbody>
</table>
Table-IX: Summary of 2x2x2 ANOVA for the variables of Age, SES and Health care within NCA patients.

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean Sum of squares</th>
<th>F-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>838.5</td>
<td>1</td>
<td>838.5</td>
<td>2.45</td>
</tr>
<tr>
<td>SES</td>
<td>3112.5</td>
<td>1</td>
<td>3112.5</td>
<td>9.116   P&lt;.01</td>
</tr>
<tr>
<td>Health Care (HC)</td>
<td>316</td>
<td>1</td>
<td>316</td>
<td>0.92    P&lt;.01</td>
</tr>
<tr>
<td>Age X SES</td>
<td>32.55</td>
<td>1</td>
<td>32.55</td>
<td>0.09 NS</td>
</tr>
<tr>
<td>SES X HC</td>
<td>195.35</td>
<td>1</td>
<td>195.35</td>
<td>0.57 NS</td>
</tr>
<tr>
<td>HC X SES X HC</td>
<td>52.75</td>
<td>1</td>
<td>52.75</td>
<td>0.15 NS</td>
</tr>
<tr>
<td>Within treatment Error</td>
<td>24584.7</td>
<td>72</td>
<td>341.4</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>29524</td>
<td>79</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

X LMSES =188.15, n =40, X UMSES =206.25 n=40

The perusal of Table-IX shows that the main effect of socioeconomic status on the dependent variable i.e. Attitdue toward life is significant (P<.01), whereas FV for rest of the variables is insignificant. The significant main effect of SES shows that LAP mean scores of the upper middle socioeconomic group and lower middle class are different (Mean of UMSEZ =206.25, N=40, Mean of LMSE =188.15, cf. Table-IX) which indicates that upper
middle class people have more positive attitudes toward life than people belonging to lower middle class.

**Table-X: Summary of 2x2x2 ANOVA for the variables of Age, SES and Health care within normal subjects.**

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean Sum of squares</th>
<th>F-value</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGE (A)</td>
<td>11376.4</td>
<td>1</td>
<td>11376.4</td>
<td>281.6</td>
<td>P&lt;.01</td>
</tr>
<tr>
<td>SES (B)</td>
<td>15180</td>
<td>1</td>
<td>15180</td>
<td>379.5</td>
<td>P&lt;.02</td>
</tr>
<tr>
<td>Health Care(C)</td>
<td>162.4</td>
<td>1</td>
<td>162.4</td>
<td>4.06</td>
<td>P&lt;.05</td>
</tr>
<tr>
<td>Age X SES A X B</td>
<td>120.25</td>
<td>1</td>
<td>120.25</td>
<td>3.06</td>
<td>NS</td>
</tr>
<tr>
<td>SES X HC B X C</td>
<td>396.1</td>
<td>1</td>
<td>396.1</td>
<td>9.90</td>
<td>P&lt;.01</td>
</tr>
<tr>
<td>HC X Age C X A</td>
<td>61.3</td>
<td>1</td>
<td>61.3</td>
<td>1.43</td>
<td></td>
</tr>
<tr>
<td>Age X SES x HC A X B X C</td>
<td>327.85</td>
<td>1</td>
<td>327.85</td>
<td>8.19</td>
<td>P&lt;.01</td>
</tr>
<tr>
<td>Within treatment Error</td>
<td>2908.65</td>
<td>72</td>
<td>40.39</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The above table indicates that the main effects of Age, SES and Health care are significant (P<.01 and P<.05). The significant main effect of Age shows that the LAP mean scores of the younger age group and that of
older age group are different (Mean of Younger age group = 237.2; Mean of older age group = 213.35, cf. Table XI) which indicates that the people younger age group have a more positive attitudes toward life than the older age group. The significant main effect of socioeconomic status shows that the main LAP scores of the upper middle socioeconomic status (UMSES) and that of the lower middle UMSES = 239.05; Mean of LMSES = 211.5, cf. Table-X) indicating that upper middle class people have a more positive attitudes toward life than those belonging to the lower middle class.

The significant main effect of health care variable shows that the main LAP scores of the health careful people (HCF) and that of healthcareless people (HCL) are different (Mean of HCF = 226.7; Mean of HCL = 223.85, cf. Table XI) which indicates that health careful people have a more positive attitudes toward life than health careless ones.

The effect of interaction between the two variables is not the same for the two values of the third variable in the interactional analysis indicates.
Table-XI: Mean LAP scores of normal subjects on the variables of Age, SES and Health care.

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young Age</td>
<td>40*</td>
<td>237.2</td>
</tr>
<tr>
<td>Older Age</td>
<td>40</td>
<td>213.35</td>
</tr>
<tr>
<td>UMSES</td>
<td>40</td>
<td>239.05</td>
</tr>
<tr>
<td>LMESSES</td>
<td>40</td>
<td>211.5</td>
</tr>
<tr>
<td>HCF</td>
<td>40</td>
<td>226.7</td>
</tr>
<tr>
<td>HCL</td>
<td>40</td>
<td>223.85</td>
</tr>
</tbody>
</table>

* No. of subjects used in ANOVA (IIind Phase)
BC FOR COMBINED A's (AGE)

(242.7) (235.4)
HCF
HCL
C2(212.65)
C1(210.35)
CA FOR COMBINED BS (UMSES & LMSES)

A = Age: (A₁ = Young; A₂ = Older)
B = SES: (B₁ = LMSES; B₂ = UMSES)
C = H.C (C₁ = HCL; C₂ = HCF)
Graphical Description

BC for combined AS

The interaction between health care and socioeconomic status is graphically shown in Fig. No. 1. It can be observed that the line joining means scores of Upper Middle Socioeconomic Status (UMSES) and Lower Middle Socioeconomic Status (LMSES) for Health Careful (HCF), and the line joining mean scores of UMSES and LMSES for Health Careless (HCL) are coming closer toward points corresponding to LMSES. Thus the difference between the means of HCF and HCL groups are contingent upon the subjects belonging to UMSES or LMSES group. It implies that the score of HCF and HCL group on the dependent variable are related to the combination of the two variables.

The second order interaction between the three variables is also found to be significant. In order to understand the nature of the interaction three graphs are prepared. In Fig. No. 2 1st order interaction between Age and H.C is shown. It can be observed that although the lines representing the mean of HCF and HCL groups tend to converge toward the older end, the distance between the
points of the two lines toward the younger age is also small. When the interaction between Age and Healthcare is plotted for the two SES group separately (Fig. Nos. 3 & 4), the departure of the means of young HCF group and young HCL group becomes noticeable only for the Upper MSES, for LMSES the points representing the means of two young groups are close to each other. The difference between the means of younger and older group which was not evident without taking into consideration the factor of SES, becomes apparent when this factor is also considered in combination with the factors of Age and Health Care.
Chapter Five
DISCUSSION

It may be recalled that the purpose of the present investigation was to make a comparative assessment of the attitude of neurocirculatory asthenia patients and of an equated group of subjects, without such an ailment, with a view to validating the major hypothesis that the state of being sick or not may be related to the variability in attitudes towards life in terms of its completion, being positive or negative.

Addressed to the above objective the statistical analysis carried out also intended to determine the role of certain demographic variables - age, sex, socioeconomic status, family structure, health care in shaping the attitude towards life in respect of health status by way of seeking confirmation (or rejection) of the various hypotheses formulated (cf. Chapter-III).

The results of this analysis may be taken up for discussion and interpretation:

As expected, and so expressed in the principal hypothesis, the non-patient group showed a significantly more positive attitude towards life than the NCA group. Understandably, and perhaps with fair amount of
justification the observation is in line with the common belief that the way one looks at life has much to do with one's actual and perceived status of health and its concomitant psychosocial remifications. Indeed, the perceptions and attitudes of people towards life with no experienced complaint of the sort people suffering from neurocirculatory asthenia have are more likely to be positive because of a sense of well-being. Stemming from a positive self concept developed out of a positive perception of present life and greater life purpose, a stronger zest for life and contentment with their conditions, a sense of fulfilment and meaningfulness.

Further, going by the ingredients of the life attitude construct the non-patient groups' placing on the positive site of the scale, is indicative of their experiencing greater personal responsibility, freedom of decision making in matters of their life and perceiving themselves in better control of shaping life events. Compared to the NCA patients, who have shown a significantly lower positive attitude toward life, the control group of non-patients seems to be less fearful of death and relatively free from anxiety on thoughts of death and dying (Durlak, 1979; Crumbaugh & Maholick, 1964). Also a more positive attitude towards life among Ss
of the non-patient group may be explained in terms of their striving to discover real meaning in personal existence, not merely confining to immediate gratification of needs but also exploring for values and ideals to fulfil in future; setting higher expectations and harbouring a sense of general optimism about themselves and the world around (Peacock & Reker, 1982). On the contrary, the NCA patients, placed as they are in an unenviable psychophysiological state, experience their sickness as a constant source of anxiety, becoming aware of their actual or perceived declining level of energy and ability to cope with the environmental demands and reacting to their painful situation of dependence on others; having to make demands on their resources. Thus, for the NCA patients, sickness is a vital factor that tends to rob them of their hopefulness and brings a negative hue to their attitudes towards life.

Of the considered variables, as the likely influence in attitude towards life among the NCA patients, socioeconomic status emerged as the only one indicating that those representing the upper middle socioeconomic status had a significantly greater positive attitude toward life than those who belonged to the lower middle socioeconomic status. The vary fact that but for the
variable of SES, rest of the variables failed to bring out
difference in attitude towards life seems to suggest that
presumably the psychological state characterizing persons
suffering from NCA is so overwhelming and all pervasive
that other considerations which could have otherwise been
significant source of variation in determining the nature
of attitude towards life, take a back seat. That is, no
matter whether the patient is male or female, older or
younger, health careful or health care-free, hails from a
nuclear or joint family, his first and foremost concern is
his affliction, a constant source of worry and a
perpetually menacing psychological situation, replete
with feelings of apprehension, insecurity and functional
inadequacy.

That the UMSES group among the NCA patients has
shown a significantly more positive attitude towards life
than the LMSES group may possibly be explained not simply
in terms of the former groups' enjoying a relatively
higher social and prosperous status in society as such,
than of the latter group, but in terms of the perception
of their respective social and economic position as a
means to cope with the affliction.

Avoiding stretching the above finding too unduly,
the implication seems to be that compared to NCA patients
in the Lower Middle SES category, those in the Upper Middle SES category have a more clearly defined purpose in life, and following Frankl's (1963); experience rather more intensely an existential vacuum in life, presupposing a certain amount of tension which is necessary to bring meaning to life, and thus contributing to a positive attitude toward life among them.

In the absence of parallel data on the role of socioeconomic status in determining the attitude toward life, the only explanation for UMSES groups' more positive attitude toward life may be that their better economic and social conditions are in some way linked with the development of an optimistic stance towards life, because these may be seen to equip them better to cope with adversities.

The hypothesis that the NCA patient group, older in age, will have a more positive attitude toward life than that of younger age, is not upheld. This indicates that age is not a significant factor to anticipate differences in the attitude of life among NCA patients.

That the male NCA patients, rather than their female counterparts would have a more positive attitude toward life, as hypothesized, remained unconfirmed. It
may be assumed, as in respect of the variable of age, that the impact of illness is too strong and heavy to be altered by mere gender denomination. There seemed to be a sufficient reason to believe that the NCA patients who did not take liberty with their health (health carefull), would have a more positive attitude toward life - a more developed sense of responsibility, an appreciation of life and the possibilities it provided for the consumation of future possibilities - than those who are careless about their health. However, the hypothesis formulated following this assumption also fell short of confirmation.

The fact of being ill and the consequences thereof in the sense of shaping a certain attitude toward life, among other factors, are likely to be moderated by the type of family set up one belongs to. Hence the expectation that NCA patients living in joint families have a more positive attitude toward life than those living in nuclear families. Our observations, however, negated this hypothesis as well, based on the above assumption.

A strictly different pattern of relationship between the given external sources of variation and attitude towards life has emerged among the non-patient control group. Whereas among the NCA patients, the only variable found to be related to attitude towards life was
socioeconomic status, among the control group, three of
the five variables considered - i.e. age, SES and health
carefulness/carelessness, were related to attitude towards
life. This observation is very much in line with the
explanation advanced in respect of NCA patient groups'
showing no variability in their attitude towards life
vis-a-vis all but one demographic variable, i.e.
socioeconomic status, possibly tending support to our
contention in two major ways: a) In the case of NCA
patients, their affliction is such a dominant worry and
concern that it becomes a central preoccupation and
weaken the possibility of any differentiation in their
attitude to life in relation to the external variables in
question; b) Among the healthy non-patient sample, who are
free from the burden of the affliction, their attitude
towards life happens to be a function of the type of group
they belong to. That is, their attitude towards life is to
be qualified by their group denomination. That normal
subjects of younger age have a more positive attitude
towards life than of older age, as our results have
indicated, seems to be at variance with that of another
study (Peacock & Reker, 1981) where increasing age was
found to be associated with a decrease in the amount of
tension and frustration felt towards life, suggesting that
probably with growing age one learns to look at life's
brighter side and not to be unduly bothered by failing to
get the desired. While it would need some more studies to authenticate the role of age in attitude towards life what we may offer by way of explanation for our younger subjects greater positive attitude towards life is that being youthful they take a less exaggerated view of the murky aspects of life and are more receptive to its happier possibilities because perhaps they have yet to learn to feel disappointed and frustrated, probably for their having a longer life ahead and greater possibilities for trying things denovo. More than their older counterparts they have a greater desire to explore for novel and varied experiences, a fuller life promising fulfilment of expectations in greater measure.

Economic and social well-being, as membership of UMSES group is supposed towards life than those belonging to the LMSES group seems to be consistent with our expectations. Interestingly, the same observation holds with the NCA patient group also which underlines the importance of the SES variable in the study of attitude of life in general. In the development of a positive attitude towards life, therefore, ones better position in terms of economic sufficiency and social recognition seem to be the main determinants of ones evaluation of life with a positive feeling, an explanation advanced earlier in
respect of the UMSES NCA patients' more positive attitude towards life.

Health carefulness Vs Health carelessness is perhaps the variable which in no study of the sort has been addressed to. For this reason, and for its being a potentially relevant variable, attitude towards life among the normal subjects may be understood more meaningfully with reference to the importance they give to their health. Results of our study conform the hypothesis that those who are very particular about their earth are likely to have a more positive attitude toward life as compared to those who are negligent about a health-oriented way of life. This is perhaps understandable in view of the consonance that seems to exist between contentment with life, fulfilment of future expectations, personal responsibility, to be on the move and in command of life, events, on the one hand, and a high priority given to keeping oneself physically fit and taking little or no liberty with one's health, on the other.

Whereas among the NCA patients the variable of health care has failed to cause variance in attitude toward life, it emerges as a significant source of variation among our normal subjects. A positive relationship existing between health carefulness and more
positive attitude toward life as indicated by the difference found between the comparison groups on the variable (the health careful being higher) may possibly be explained both ways: A heightened concern for physical well-being and general health, while appearing to be a consequence of the attitude one has towards life may as well be a contributing factor in the development of a positive attitude toward life.

That the variable of health care has not been found to be relevant to the clinical group, does not minimize its importance. Rather, it needs to be tried in other comparative studies with greater rigour and sharper focus. The most question is: Why concern or lack of concern with physical well-being has not shown up in our NCA patients' attitude toward life? Do these patients find their affliction so awful and disarming that being bothered about their health considerations is too late in the day. These and other such questions may form part of further studies along with special attention to be given on planning studies towards helping the suffering lot in coping with their affliction.

To sum up the discussion, it may be restated that the main finding of the study is that NCA patients belonging to the UMSES group have a more positive attitude toward
life. Of the five variables, SES is the only source of variation in the attitude of life among the NCA patients, suggesting that the state of being ill is such a dominant influence that other considerations are relegated to the background. Death of comparable studies on neurocirculatory asthenia and its concomitants restricts broader generalizations of our findings and stress the need for more conceived research on the subjects.
SUMMARY

The purpose of the study was to make a comparative assessment of attitude towards life among the neurocirculatory asthenia patients and their normal counterparts in relation to the variables of age, sex, SES, structure of family and health care. Assumed to be a major differentiating factor, neurocirculatory asthenia was the main interdependent variable in respect of which attitude toward life between the clinical and the non-clinical group and within each of these group was studied.

Nervous system and heart play an important role in neurocirculatory asthenia (NCA) which is believed to be functionally based with a heart complaint associated with palpitation, labile action of the heart, respiratory difficulty, sweating and aversion to physical exertion. With no organic basis conclusively demonstrated, NCA is known as an ill-defined syndrome of psychogenic origin. Towards introducing the problem, the concepts in question was defined and reference made to the psychosomatic medicine, cardiovascular ailments and neurocirculatory asthenia before posing the question for enquiry.
Studies were reviewed under specific heads based on the kind of variables considered or the sample addressed to with a two-fold purpose of providing a context of empirical data on the problem and arriving at justification to embark upon the study. These included reference to the variables studied in earlier research such as pertaining to emotional, social, environmental aspects - stressful life events, social conditions, role of family in the incidence of diseases of the psychosomatic fold, particularly of cardiovascular nature.

The sample (N=200) was drawn from a relatively larger population of patients visiting the OPD at the J.N. Medical College, Aligarh with complaints of heart related diseases, catering to the sociodemographic variables of the study so that each variable was equally represented. An equated sample of same strength was selected exercising possible controls on the extraneous variables. The major tool of the study was Reker's Attitude Toward Life Scale, meant for the assessment of the independent variable. A questionnaire seeking replies on health care was worked out specially for the purpose of the study.

For the study of intergroup and intragroup differences, the role of the demographic variables as source of variation in the ATL, Analysis of variance was used. The variables found not to show any impact on the
dependent variable, as determined in the initial analysis, were dropped and the later analysis was confined to be operating in the differences in attitude toward life. Means were also computed to determine the direction of difference between the comparison groups on ATL.

Some of the major findings of the study were:

- Socioeconomic status was a significant influence on ATL among the NCA patients, those belonging to the UMSES group, showing a more positive attitude toward life.

- Among NCA patients, none of the rest of the variables viz. age, sex, structure of family, health care, was found to be related to ATL.

- All the variables, excepting, sex and structure of family showed themselves up in the difference on ATL, among the group of normal subjects.

- The variables of socioeconomic status emerged as the most significant source of differentiation on ATL both among the NCA patient group and the control group.
REFERENCES
REFERENCES


APPENDIX
Instructions:

People have different attitudes and opinion about different aspects of life and they vary in expressing the magnitude of their reactions. You are requested to respond to each of the statement and indicate the intensity of your attitude by putting a check ( ) mark under any of the seven categories, against each statement.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Moderately Agree</th>
<th>Slightly Agree</th>
<th>Not at all</th>
<th>Slightly Disagree</th>
<th>Moderately Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

1. My life is running over with exciting good things.

2. Life to me seems very exciting.

3. Basically, I am living the kind of life I want to live.

4. I get a great thrill out of just being alive.

5. Everyday is constantly new and different.
6. I feel I have a satisfying life purpose.

7. In thinking of my life I see a reason for my being here.

8. The meaning of life is evident in the world around us.

9. In achieving life's goals, I have felt completely fulfilled.

10. I seem to change my main objectives in life.

11. I feel the lack of and a need to find a real meaning and purpose in my life.

12. I feel that some element which I can't quite define is missing from my life.

13. I try new activities or areas of interest and then these soon lose their alternatives.

15. I have experienced the feeling that while, I am destined to accomplish something important. I cannot put my finger on just what it is.

16. I feel a need to develop clearer goals for my life.

17. My life is in my hands and I am in control of it.


19. Concerning my freedom to make my own choices, I believe I am absolutely free to make all life choices.

20. My accomplishments in life are largely determined by my own efforts.

21. I regard the opportunity to direct my life as very important.
22. It is possible for me to live my life in terms of what I want to do.

23. Some people are very frightened of death, but I am not.

24. Even though death is inevitable, I cannot help but be concerned about drying.

25. I think I am generally much less concerned about death than those around me.

26. Death makes little difference to me one way or another.

27. I would neither fear death or another.

28. I am more afraid of death than old age.

29. I think about the ultimate meaning of life.
30. I am seeking a meaning, purpose or mission for my life. 

31. Over my lifetime I have felt a strong urge to find myself. 

32. I've been aware of an all powerful and consuming purpose towards which my life has been directed. 

33. A period of personal hardship of suffering can help give a person a better understanding of the real meaning of life. 

34. Everyone is held accountable for his/her life. 

35. I hope for something exciting in the future. 

36. I think of achieving new goals in the future. 

37. I feel the need for adventure and "new World to Conquer".
38. New and different things appeal to me.
39. I am restless.
40. I feel that the great fulfilment of my life lies yet in the future.
41. I expect the future to hold more promise for me than the past has.
42. In my life I have a very clear goals and aims.
43. Before I achieve one goal, I start out towards a different one.
44. I look forward to the future with great anticipation.

NAME: ________________________________
AGE: ____________ SEX: ____________________
MONTHLY INCOME: ______________________________
PROFESSION: ________________________________
FAMILY: JOINT OR NUCLEAR
ADDRESS: ________________________________________
____________________________________________________
Instructions:

Below are given certain statements reflecting to attitudes about health to each of which you are requested to respond by putting a check mark ( ) on the category (against each statement) which best represents the intensity of your attitude.

1. Strongly Agree
2. Moderately Agree
3. Can't Say
4. Moderately Disagree
5. Strongly Disagree

1. I am generally very careful about my health. 
   
2. It is not a wise to ignore even a minor disease. 
   
3. There is nothing like perfect health. 
   
4. Disease is the aim of health. 
   
5. I have a sense of well being even when I am not well. 
   
6. Taking extra care of one's health is in itself a disease. 
   
7. One should ever be watchful of changes taking place in ones body (that may be the symptoms of an ensuring disease). 
   
SA MA Can't MDA SD
* 8. Even the healthiest person cannot be without some kind of disease.

* 9. There is no point worrying too much about one's health as it is not his doing.

* 10. One has to fall ill as long as he lives.

11. It is in man's power never to fall ill.

12. The very thought of a major disease frightens me.

* 13. The tip to good health is to be least careful about it.

14. I pity those who take liberty from their health.

* 15. When ill, I generally avoid going to a doctor and do it only on others' insistence.

16. I believe in seeking the best medicine when ill.

17. I rush to consult a physician on slight indication of a common cold.

* 18. I am not very particular about following the instructions of a doctor.
19. I never take a serious view of my disease.
20. I never take chance even with a minor complaint.
*21. I generally do not make fuss of my illness.
22. My bed-side table is full of appetizers, tonics and nutrients.
23. I am a regular reader of health magazine.
*24. I do not believe in periodic medical check ups.
25. I am too choosy about food in terms of its medium of cooking and its nutritive properties.
26. I cannot do without having a minor walk.
*27. I believe that illness takes its own course and recovery is its logical final.
28. I would opt to stay hungry than to go to hotel with unhygienic conditions.

* 29. I believe in going for food of my liking even if it doesn't suit my health.

* 30. I believe that disease is heaven sent so why to worry.

NAME: ____________________________________________

AGE: ___________ SEX: ____________________________

MONTHLY INCOME: _________________________________

PROFESSION: ______________________________________

FAMILY: JOINT OR NUCLEAR

ADDRESS: _________________________________________

_________________________________________________________________