CHAPTER III

PRESENT STUDY
The previous chapter provides ample evidence that the concept of 'stress' is still an enigma. Despite numerous studies, there exist large gaps in our information regarding stressful life events and their relation to other variables like personality and coping. The need for further research taking these aspects into account, is keenly felt (Cohen and Lazarus, 1983; Perkins, 1982; Rabkin and Struening, 1976), as it may have far reaching implications in the field of mental health. In India, stress research is still in its infancy. Needless to say, the dimensions of personality and coping are still relatively unexplored (Murthy, 1975; Saxena et al., 1983). The present investigation attempts to take a small step in this direction.

PURPOSE OF THE STUDY

The present study examines personality and coping behaviour in relation to stressful life events in persons suffering from neurotic disorders as compared to a group of normals.
DEFINITION OF KEY WORDS

Terms like 'personality', 'coping' and 'stress' are some of the most ambiguous, yet frequently used, words in the behavioural sciences. They are concepts, familiar to both laymen and professional alike, and hence, understood by all as long as "... they are used in a sufficiently vague and general context" (Cox, 1978). At the outset, therefore, these terms are operationally defined.

PERSONALITY

The term represents here the "sum-total of the actual or potential behaviour patterns of the organism, as determined by heredity and environment; it originates and develops through the functional interaction of the four main sectors into which these behaviour-patterns are organized: the cognitive sector (intelligence), the conative sector (character), the affective sector (temperament) and the somatic sector (constitution)" (Eysenck, 1947). Personality is studied here, in terms of 'traits' or observed constellations of individual action-tendencies, as manifested in the ways people respond and express themselves in relation to situations.

COPING BEHAVIOUR

Coping behaviours are attempts by an individual to resolve stress. More specifically, they are responses to
external life stress that serve to prevent, avoid, reduce or control stress and emotional distress (Folkman and Lazarus, 1980; Pearlin and Schooler, 1978). It does not refer to a single act, but to a constellation of many acts and thoughts engendered by stressful situations. The terms coping behaviour, coping strategy and coping response are used synonymously.

**STRESSFUL LIFE EVENTS**

Stressful life events are "events which, on common sense grounds, are likely to produce emotional disturbance in many people" (Brown and Birley, 1968). They signify transitions in a person's psychosocial life adjustment, but do not refer to a person's chronic life difficulties or anticipated life stress. They are objective events in the external environment.

**NEUROTIC DISORDERS**

The International Classification of Diseases, 9th revision (W.H.O. 1978) definition of neurotic disorders was adopted here: "Neurotic disorders are mental disorders without any demonstrable organic basis in which the patient may have considerable insight and has unimpaired reality testing, in that, he usually does not confuse his morbid subjective experiences and fantasies with external reality. Behaviour may be greatly affected although usually remaining within socially acceptable limits, but personality is not
disorganized. The principal manifestations include excessive anxiety, hysterical symptoms, phobias, obsessional and compulsive symptoms and depression'.

OBJECTIVES OF THE STUDY

The broad objective of the study was to examine personality and coping behaviour in relation to stressful life events in persons suffering from neurotic disorders as compared to a group of normals. In order to achieve the above, several specific objectives were framed as enumerated below:

1. To examine the socio-demographic characteristics of the neurotic and normal group.

2. To examine the clinical characteristics of the neurotic group.

3. To determine the number of life events and the subjective distress experienced over a one year time span by neurotics and normals.

4. To study the influence of demographic factors on the experience of stressful life events and subjective distress.

5. To examine the distribution of life events in neurotics and normals and the pattern of their occurrence.

6. To determine whether neurotics and normals differ in the kind of life events they experience and in their subjective perception of these events.
7. To explore differences between neurotics and normals with regard to the perceived dimensions of stress in terms of expectancy, novelty, controllability and desirability.

8. To examine differences between neurotics and normals with regard to chronic stress.

9. To determine the personality pattern in neurotics and normals.

10. To find out whether personality dimensions influence the experience of stressful life events and distress in neurotics and normals.

11. To ascertain the size of coping repertoire in neurotics and normals and the influence of demographic factors and personality dimensions on the size of the repertoire.

12. To study the commonly used and the infrequently employed coping behaviours in neurotics and normals.

13. To examine differences in coping behaviour between neurotics and normals.

14. To determine the influence of demographic factors and personality dimensions on coping behaviour.

15. To ascertain the pattern of coping behaviour in relation to specific life events in neurotics and normals.
SELECTION AND DESCRIPTION OF TOOLS

Keeping in view the objectives of the study, specific tools were used to gather necessary information. Relevant socio-demographic details pertaining to sex, age, education, occupation, income, mental status, religion and family type were collected on a data sheet (Appendix-I). For the clinical group, additional details pertaining to registration number, diagnosis, duration of illness, type of onset, presence of precipitating factor, course of illness and presenting complaints were obtained from the case sheet and the patient at the end of the interview (Appendix-I).

In addition, the following tools were used:

1. Eysenck Personality Inventory (EPI) Form A (Eysenck and Eysenck, 1964).
3. Coping Check List I and II (CCL I; CCL II).
4. Stressful Life Events Inventory (SLEI).
5. General Health Questionnaire (GHQ, Goldberg and Hillier, 1979).

The self-report modality was chosen as it is advantageous in that the data derived arises from the individual experiencing the phenomena in question. All other kinds of observations are limited to reporting apparent versions of the individual's experience, based on the interpretation of
manifest behaviour or its absence. Derogatis (1982) stated that "even though the individual is clearly subject to need-induced distortions in his representation, he is obviously much closer to the phenomena than any external observer can be".

The personality domain was measured using two tests: the EPI and the I-E scale. The EPI was selected as it is a valid measure of two universal, second-order factors isolated on the basis of repeated factor analytic techniques. They account for the largest variance in human behaviour, and have been found to have a biological basis. It is also representative of the trait theory, emphasizing the individual in relation to the situation. The Eysenck Personality Questionnaire (EPQ, Eysenck and Eysenck, 1976) was not considered as it measures the dimension of psychoticism not included in the present study.

The I-E scale, emphasizes the situation and its personal meaning for the individual, and is representative of the social learning model. It is found to operate more in situations which differ widely in their meaning and which cannot be controlled.

The Coping Check List and Stressful Life Event Inventory were developed for the present study, as suitable tools in the Indian context were not available. They are dealt with in considerable detail.
The GHQ was used to screen the normal subjects, and exclude persons having minor or major psychiatric disturbances.

A description of each tool follows:

**EYSENCK PERSONALITY INVENTORY (EPI)**

The EPI (Eysenck and Eysenck, 1964) is essentially an improved version of the Maudsley Personality Inventory (Eysenck, 1959). Eysenck and his co-workers, on the basis of factor analytic studies found two pervasive independent dimensions of personality: Extraversion-Introversion and Neuroticism - Stability accounting for most of the variance in the personality domain. Eysenck and Eysenck (1969) refer to Extraversion (E) and Neuroticism (N) as "super factors" and the EPI is designed to assess these hypothesized dimensions.

The EPI is available in two parallel forms: A and B. Each form has a total of 57 items of which 24 comprise the 'E' scale, 24 items the 'N' scale and 9 items the Lie (L) scale. The Lie scale, adapted from the Minnesota Multiphasic Personality Inventory (Hathaway and McKinley, 1943) indicates a desirability response set. Items on the EPI are simply worded to make them understandable, even at lower education and intelligence levels. Items are scored dichotomously, Yes - No, with a score of 1 being given to the keyed response. Details of scoring and interpretation are provided in the manual (Eysenck and Eysenck, 1964).
The 'E' and 'N' dimensions are independent, the correlations being virtually zero (Howarth and Browne, 1972; Knowles and Kreitman, 1965). They have been found to be stable, the 'E' to a slightly greater extent than the 'N'. The 'N' scores are influenced, to a small, but insignificant degree by changes in the patients' clinical state (Bianchi and Fergusson, 1977; Knowles and Kreitman, 1965; Verghese and Abraham, 1972). Women tend to score higher than men on 'N' and lower on 'E' (Lanyon, 1970; Prabhu, 1970). Test-retest reliabilities are between 0.80 and 0.97 and correlations between the two parallel forms run from 0.75 to 0.91. Eysenck and Eysenck (1969) recommend combining forms A and B when decisions are to be made about individuals. This is not necessary in research settings (Cline, 1970).

The theoretical background and the experimental validation of the concepts of 'E' and 'N' are presented by the authors of the EPI (Eysenck and Eysenck, 1969). The high end of the 'E' factor is regarded as extraversion and applies to individuals tending to be outgoing, impulsive and uninhibited, having many social contacts and frequently taking part in group activities. The introverted end is seen in a quiet, retiring sort of person, introspective, fond of books rather than people, one who is reserved and distant except to intimate friends. He tends to plan ahead, looks before he leaps and distrusts the impulse of the moment. He does not like excitement, takes matters of everyday life with proper seriousness and likes a well-ordered mode of life.
The high end of the neuroticism dimension is indicative of emotional instability and overreactivity. High scoring individuals tend to be emotionally over-responsive and have difficulty in returning to a normal state after emotional experiences. Such individuals frequently complain of vague, somatic upsets of minor kinds such as headaches, digestive troubles, insomnia, backaches etc. They are also predisposed to neurotic disorders under stress. Those with low scores on neuroticism tend, in general, to be better-adjusted and more emotionally stable. Eysenck makes a strong case for a biological basis for the two personality dimensions (Eysenck and Eysenck, 1969).

The EPI has been widely used in the selections of subjects for objective laboratory research, applied marketing research, in psychiatric and medical research and for the purposes of clinical diagnosis and treatment. The EPI and its forerunner the MPI, have been standardized in India (Abraham, Sundar Rao and Verghese, 1977; Jalota, 1964, 1965; Thakur and Thakur, 1973; Verghese and Abraham, 1972) and vernacular translations are available. The 'E' and 'N' dimensions have been found to be normally distributed and reliability data, similar to the original, have been obtained. Clinical utility of the scale has been established (Prabhu, 1970; Verghese and Abraham, 1972).

In the present study, EPI Form A standardized by Verghese and Abraham (1972) was used (Appendix-II).
The Internal-External Control of Reinforcement dimension is an expectancy variable based on Rotter's social learning theory. The basic premise in social theory is that behaviour potential in specific situations is a function of the expectancy that reinforcement will occur and the value of that reinforcement for the individual. Two different reinforcement patterns exist which lead to either the general expectancy that rewards are contingent upon internal sources (e.g., effort) or that the rewards are externally related to things such as luck, chance, fate, or powerful others. General expectancy is referred to as 'locus of control'. The I-E scale was developed to measure individual differences in skill versus chance expectancy.

The historical background, theoretical framework and test development are provided in the form of a monograph (Rotter, 1966). The final version of the I-E scale is a 29 item forced-choice test including 23 real and 6 filler items. The filler items were intended to disguise the intent of the test. Self-report instructions are provided and items are worded so as to make appropriate reading for non-college adults and high-school level students. Scoring is accomplished by totalling the number of 'external' responses, a score of 1 being given for each keyed response. The higher the score, the greater the likelihood of the reinforcement being perceived.
as the result of luck, chance, fate or under the control of powerful others. Mean and standard deviations are reported for a number of samples. However, users are encouraged to create their own local norms. Internal consistency varies from 0.69 to 0.73, while test-retest variability co-efficients at one to two months are between 0.49 to 0.83.

The I-E scale was developed as a 'broad gauge instrument', not as an instrument to allow for very high prediction in some specific situation, but rather, to allow for a low degree of prediction of behaviour across a wide range of potential situations (Rotter, 1975). The uni-dimensional nature of the I-E scale has, however, been subjected to considerable scrutiny. A number of researchers have done independent factor analysis to show the existence of at least two factors (Levenson, 1974; Mirels, 1970) and a number of locus of control scales are now in existence (Dixon and McKee, 1976; Levenson, 1973; Nowicki and Strickland, 1973). Factor analysis, however, revealed that I-E is still the single factor accounting for the largest variance, although there are other small, but significant, factors in existence.

In India, researchers have shown considerable interest in the concept of locus of control. Rotter's scale has been widely used in clinical and non-clinical populations, both in English and vernacular translations. The findings have been reviewed by Faroqi (1984) (see Appendix-III for Scale).
COPING CHECK LIST (CCL)

The investigation of coping is hampered by the lack of adequate instruments for its measurement (Cohen and Lazarus, 1983). This statement holds more true in the Indian setting. A transactional perspective, emphasizing that the way in which stressors are appraised determines the selection and utilization of coping responses, was adopted here (Lazarus, 1966; Lazarus and Launier, 1978; Moos and Billings, 1982; Fearlin and Schooler, 1978). Coping responses have three main functions: (1) to change the stressful situation, (2) to control the meaning of the stressful situation and (3) to control the emotional distress in relation to the stress. Behaviours pertinent to these three domains of problem-focussed, appraisal-focussed and emotion-focussed coping were, therefore, included (Billings and Moos, 1982). No distinction was made between coping and defensive processes (Haan, 1969, 1977) or mature and immature ego-processes (Vaillant, 1971), as it was felt that defense is, often inappropriately, equated with pathology. Further, both defense and coping processes may 'inter-weave' as people confront stressful situations, and it is difficult to separate these two strands' (Murphy, 1974).

Within this framework, a coping checklist was developed for the present study. Checklists have an advantage in that they can be made comprehensive, while still being easy to use. An item pool was collated from coping literature (Billings and Moos, 1981; Cohen and Lazarus, 1983; Folkman.

In order to generate items specific to the socio-cultural setting, the following two steps were adopted:

1. Six mental health professionals (two psychiatrists, two clinical psychologists and two psychiatric social workers), with a minimum of five years experience, two heads of religious institutions and two lay counsellors were interviewed. On the basis of their experience with a large cross-section of people, they were asked to suggest items for the checklist, as to how people cope with life stress.

2. Fifteen neurotic and 15 normal subjects, males and females, in the age group of 20–40 years, literate and hailing from an urban background were individually interviewed to obtain information on coping methods they had used to handle stressful life events.

The total list of items was then carefully screened and repetitive items excluded. Some items were rephrased to make for easy reading; for example, expressions, familiar to the western tongue, like 'silver lining in the clouds', 'keeping a stiff upper lip' were avoided. Items like 'changed and grew as a person', 'rediscovered what is important in life' were seen as end-products of the stress-coping process and, therefore, dropped. Care, however, was taken
when deleting items as what appears valueless in one population or context, may, in fact, be valuable in another (Folkman and Lazarus, 1980). Moreover, a coping method which occurs very infrequently may be unique in its value in handling stress.

Psychometric procedures such as internal consistency and factor analysis were not used as they have limited usefulness in evaluating the adequacy of coping behaviour (Billings and Moos, 1981). These techniques assume positive inter-item co-variation on similar coping responses. However, successful use of one coping method may reduce stress and, thus lessen the need to use other responses (Moos and Billings, 1982). In addition, as Lazarus, Averill and Opton (1974) have stated, a major difficulty with checklists based on factor analysis is that the specific adjectives defining a dimension may change from one study to another and 'entire dimensions may disappear or coalesce depending upon the context'. A checklist should, therefore, be viewed as an approach to assessment rather than as a well standardized technique, its major strong point being that of content validity.

The final version of the CCL comprised of 70 items describing a broad range of behavioural and cognitive coping responses that an individual might use to handle stress. However, this list is by no means exhaustive. Items are scored dichotomously, Yes/No, indicative of the presence of or absence of a particular coping behaviour.
Two methods of administering the checklist are described. In the first, referred to as CCL-I, the coping methods used to handle stress and distress, in general, are recorded. This procedure assesses an individual's coping style or resource in terms of the tendency to use certain methods frequently or predominantly across a variety of stressful situations. The total number of items reported by an individual is indicative of the size of the coping repertoire, that is, the number of coping methods the individual has at his disposal when faced with stress. Roskies and Lazarus (1980) refer to it as the 'bank account' and Pearlin and Schooler (1978) as the 'weapons' available to combat stress.

In the second method, referred to as CCL-II, coping responses used to handle a specific stressful event can be elicited without referring to the responses of the first administration. This is a measure of the coping strategy or specific techniques actively used to deal with a particular stressful life event. It is an expression of an individual's coping style, but also his attempts to try new approaches to the challenge imposed by the event.

Both CCL-I and CCL-II are kept open ended, allowing the individual to report additional coping behaviours. The CCL-I and CCL-II were tried out in the pilot phase and then used in the main study (see Appendix-IV for CCL).
STRESSFUL LIFE EVENTS INVENTORY (SLEI)

Limitations of existing scales to measure stressful life events have been widely commented upon (Brown, 1974; Brown et al., 1973; Cleary, 1980, 1981; Dohrenwend and Dohrenwend, 1978; Goldberg and Comstock, 1980; Miller, 1981; Monroe, 1982; Murthy, 1975; Rabkin and Struening, 1976; Tausig, 1982). At the time of planning this study, no tool developed in India was available. The need to construct a tool suitable and specific for the population to be studied was keenly felt. The SLEI was developed for this purpose, and an attempt made to overcome and circumvent some of the shortcomings listed in the literature.

The definition of stressful life events by Brown and Birley (1968), given earlier in this chapter, was taken as the basis for tool development. The definition allows for a wide range of life events without restricting them in terms of degree of change or readjustment (Dohrenwend and Dohrenwend, 1974; Holmes and Rahe, 1967), or in terms of undesirability or upset (Paykel et al., 1969). Items from existing inventories and scales (Brown and Birley, 1968; Cochrane and Robertson, 1973; Dohrenwend and Dohrenwend, 1978; Holmes and Rahe, 1967; Horowitz et al., 1977; Johnson and Sarason, 1979; Paykel et al., 1969; Tennant and Andrews, 1976), were pooled together. Stressful life events reported in Indian literature (Singh, Kaur and Kaur, 1981; Venkoba Rao and Nammalvar, 1976) were also included.
In addition, case files of 50 neurotic patients (males and females, 20-40 years, literate, urban background) who had sought treatment in the previous six months were examined and relevant items culled out. Further, six mental health professionals, two heads of religious institutions and two lay counsellors were interviewed, to suggest, in the light of their experience with people in distress, life events seen to occur frequently. In order to make the SLEI as comprehensive and relevant as possible, 15 neurotic patients and 15 normal subjects were also individually interviewed. Items for the SLEI were chosen to cover two major sub-populations of events: (1) the universals of human experience like death, birth, marriage etc. and (2) events specific to the demographic characteristics of the population and the socio-cultural setting.

Each item in the pool was screened and overlapping items excluded. Items reflecting symptoms of illness such as 'change in eating habits', 'change in sleeping habits' were deleted to avoid contamination between events and illness. An ambiguous item like 'change in working hours' was rephrased to 'increased' and 'decreased' working hours. Clearly identifiable, discrete events were retained and items like 'marital conflict', 'friction with in-laws', indicative of chronic, ongoing stressors were dropped. Anticipated events or 'non-events' (Gersten et al., 1974) were not included. Fairbank and Hough (1979) proposed even more stringent
guidelines arguing, that any event even remotely under the subjects' control should be eliminated from analysis to avoid contaminating the stress-disorder relationship. However, as Perkins (1982) has commented, such a method would also eliminate a great deal of interesting variance associated with person X event X outcome interactions.

The final list, comprised of 86 items, divided into 8 categories (Work = 15, Education = 5, Marital = 14, Family = 13, Financial = 12, Health = 12, Bereavement = 8, and Legal = 7) based upon an a priori classification (Myers, Lindenthal and Pepper, 1971; Paykel et al., 1969). Some researchers are of the opinion that such an a priori categorization does not add to our understanding of the role of life events as stressors (Tausig, 1982). However, the method of content clustering according to the locus of events in the real world, has the advantage that there is a face understanding of what the events might be (Hurst, 1979). Though not based on statistically derived clusters, this technique imposes a structure on the scale and may be useful in identifying areas of stress in particular populations. An additional advantage is that the effects of forgetting can be partially reduced when items are grouped by logical sets, so that they tend to prime one's memory (Horowitz et al., 1977).

Research on stressful life event measurement has also been concerned with various dimensions of events such as their desirability, novelty and controllability (Andrews and
Tennant, 1978; Dohrenwend and Dohrenwend, 1974; Matheny and Cupp, 1983; Paykel, 1974). Although, several authors have demonstrated that undesirable or negative events are better predictors of subsequent illness (Gersten et al., 1974; Myers et al., 1972; Paykel, 1974; Ross and Mirowsky, 1979; Vinokur and Selzer, 1975) the tool was not restricted to negative events alone. Lazarus (1966) opined, that stress is dependent upon cognitive processes related to the perception of events and their meaning to an individual. Hudgens (1974) reported, that 'what is stressful for one person may be of little consequence to another', and Tausig (1982) commented that 'events are not universally viewed as desirable or undesirable'. For example, divorce may be viewed as desirable by one and undesirable by another.

In the SLEI, four 'perception' dimensions from among those identified in stress research were chosen (Roese and Smyer, 1983). The dimensions are as follows:

1. **Expectancy**: Whether the event was anticipated or not.

2. **Novelty**: Whether the event was a novel one or recurrent.

3. **Controllability**: Whether the event was perceived as within or under one's personal control (in terms of making it happen or preventing it) or beyond one's control.
4. **Desirability:** The perception of the event as positive, neutral or negative in valence.

Subjects indicate their response for each of these 4 dimensions for each life event experienced.

Researchers have seriously questioned the need to quantify life events in terms of the amount of stress they denote. Correlations between weighted and unweighted scores of 0.97 have been reported by Chiriboga (1977); 0.95 by Dohrenwend (1979); 0.97 by Lei and Skinner (1980) and 0.89 by Tennant and Andrews (1978). Zimmerman (1983a) reported that in 16 out of 19 studies, weights did not improve the correlation between stressful life events and measures of pathology. These collective findings may have influenced Rahe (1978) to acknowledge that it would be 'hard to improve' on simply additively counting life events. In addition to being complicated in terms of scaling, differential weighting schemes are not reliable across samples and, therefore, should be derived from the specific population on which they are applied (Dohrenwend and Dohrenwend, 1978; Ross and Mirowsky, 1979). On the basis of these research findings, it was decided to use a simple additive index in which all life events are weighted as one.

A sizeable group of life event investigators have argued that each subject's individual weights represent important systematic variance in the subject's experience of
stress (Chiriboga, 1977; Horowitz et al., 1977; Hurst, Jenkins and Rose, 1978; Redfield and Stone, 1979; Vinokur and Selzer, 1975). Individualized ratings produce a more accurate indication of the effect of life events on particular individuals who may differ in their perceptions of events. In the SLEI each event experienced can be rated for subjective distress aroused on a 5 point rating scale ranging from 'not at all' (0) to 'very severely' (4). Dohrenwend (1978) has argued against the use of such a method opining that "individualized, ordinarily post-hoc measures of change, while ... useful for understanding and treating individual cases, is not a clean measure of environmental input in a stress process". The measure is a resultant of environmental input, the affected individual's predisposition and his assessment of the outcome. Tests of reliability are a function of recall and the time interval chosen, as events are bound to vary over time. Content validity is essential in such a scale and it should not only be comprehensive, but include events that the study population would be 'at risk' for in the particular time span investigated. This was ensured at the time of forming the initial item pool.

The final version of the 86 item SLEI was then tried out in a pilot study on 15 neurotic patients and 15 normal subjects, matched on relevant socio-demographic variables. The inventory was kept open-ended, for inclusion of new items. No new items were obtained. Items were simply worded and
easily comprehended by the subjects. No difficulties in using the 5 point rating scale for distress were reported. The SLEI was used in the main study, without further revision.

The SLEI can be self-administered or administered by the interviewer in the form of a semi-structured interview. It can be used for retrospective and prospective research, and the time span covered may vary, depending on the needs of the investigator.

The SLEI provides a total stressful life events (SLE) score - a simple additive index of life events experienced in the specified time period; and a total subjective distress (SUD) score - the sum total of subjective distress experienced in relation to life events for the same time span. Brown (1979) stated that 'to some extent we are prisoners of our measurement procedure. For tackling certain problems it would be good to have simpler measures of events'. The SLEI is an attempt in this direction.

In the present study, the SLEI was administered in the form of a semi-structured interview. Subjects were asked to spontaneously recall and report events experienced by them over the past two years. They were requested to date each event to the nearest month. Although subjects were interviewed alone, they were permitted to consult their relatives regarding dating of events. The interviewer then went over
each item in the SLEI to check if the subject had omitted any event. Standard probes were used to enquire into each area of stress like work, education etc. Interviewer-assisted procedures usually help in increasing the reliability of event reports (Henderson, Byrne and Duncan-Jones, 1981). Horowitz et al. (1977) reported that normal literate populations, and most psychiatric patients, rarely report events that have not occurred and false negatives are more common than false positives.

In scoring the SLEI for patients, the time span covering the duration of illness was excluded, and events reported over a one year period prior to the onset of illness was taken for the purpose of analysis. The illness period deleted for each neurotic subject was also deleted for each individually matched normal subject, and a one year time span considered for analysis. This made the time span comparable and also controlled for the effects of forgetting and 'fall off' in reporting in both groups (Funch and Marshall, 1984).

In addition to scoring for total stressful life events, total subjective distress and perception dimensions mentioned, at the end of the interview, the investigator also enquired for chronic stresses (ongoing, current stresses or strains) using an open-ended question. (See Appendix-V for SLEI).
GENERAL HEALTH QUESTIONNAIRE (GHQ)

The GHQ is a self-administered screening questionnaire aimed at detecting those with a diagnosable psychiatric disorder (Goldberg, 1972). The original questionnaire consisted of 60 items from which shorter versions of 30, 28, 20 and 12 items have been derived. The 28 item scaled GHQ was used in the present study. Details of the statistical methods used in forming this scale are provided in an article by Goldberg and Hillier (1979). The four subscales are: (a) Somatic Symptoms, (b) Anxiety and Insomnia, (c) Social Dysfunction, (d) Severe Depression. Thirty five per cent of the variance is accounted for by a general factor, and the intercorrelations of the subscales and total score indicate that anxiety, is a core phenomenon underlying common syndromes of psychiatric disorders. Concurrent validity was established using independent interviewer ratings on the Clinical Interview Schedule (Goldberg, Cooper, Eastwood, Kedward and Shepherd, 1970). The correlations between total GHQ scores and psychiatric rating of severity was 0.76.

The authors recommend that a threshold score of 4/5 gives better results than 5/6. The sensitivity of the scale is 88 per cent, the specificity 84.2 per cent with an overall misclassification rate of 14.5 per cent. These results are similar to those obtained with the longer 30 and 60 items General Health Questionnaires.
The GHQ, simple in its wording, begins with questions with a somatic bias (Scale A - Somatic Symptoms). As one proceeds, the items become more overtly psychological and the potentially more disturbing items like those about suicidal ideas (Scale D - Severe Depression) are left to the end. The questions relate to the present and recent complaints and each item consists of asking whether the respondent has recently experienced (over the past few weeks) a particular symptom or item of behaviour on a four point scale ranging from 'not-at-all' to 'never more than usual'. The exact response format varies from one scale to another. The authors recommend the simpler GHQ scoring method of 0-0-1-1 for the four point scales which gives results which are ''if anything better'' than the Likert method of 0-1-2-3. The scaled GHQ is intended for studies in which the investigator requires more information than that provided by a single severity score.

The GHQ has been used in India (Chandrasekhar, 1979; Rao and Jai Prakash, 1982; Uma and Jai Prakash, 1982). The scaled version has also been found suitable (Rao and Murthy, 1984). It was chosen for the present study as it is short, easy to comprehend and administer and is a quick method of screening people in the community. It ensured that the 'normals' were indeed free of psychiatric illness. (See Appendix-VI for GHQ).
OPERATIONAL PROCEDURE

pilot Study:

A pilot study was conducted in order to (1) allow the researcher to familiarize herself with the tools used, (2) check for difficulty in comprehending items on the various assessment tools and (3) ensure that the coping checklist and the stressful life events inventory were comprehensive and relevant to the population under study.

In the pilot phase, 15 neurotic patients and 15 normal subjects (males and females) were interviewed. All the tools were found easy to comprehend. However, it was noticed that the respondents preferred having the interviewer write the responses rather than doing so on their own. This is probably because, at the lower education levels, the spoken English is better than the ability to read and write English. It was decided, therefore, to keep the procedure uniform and the investigator administered all the tools in the main study.

Main Study:

Ideally speaking, the design of the study should have been a prospective, longitudinal one using a patient-cohort sample. Time constraints, however, made this impracticable. The study was, therefore, limited to a cross-sectional, case-control design. To overcome some of the limitations inherent in such a design, certain precautional measures were built
into the study. These will be dealt with in various sections, pertaining to sample selection and data collection.

The study was conducted in the city of Bangalore, Karnataka State, India. Bangalore contains a substantial proportion of different social classes, occupations and religious groups from within Karnataka, neighbouring states and other parts of the country. The 1981 census gives the following linguistic breakup: Kannada 31.8 per cent, Tamil 25.37 per cent, Telugu 16.52 per cent, Urdu 13.91 per cent, Marathi 3.71 per cent and Malayalam 3.27 per cent. It is comparable to other large cities in India and can be said to be a microcosm of urban India. The study extended over a period of 12 months. There were no major social or cultural upheavals or natural disasters at the time.

Sample Selection:

The study was conducted on 2 groups of 60 subjects each, the total sample being 120. Sex has been found to be an important independent variable in stress-coping paradigms (Billings and Moos, 1984; Folkman and Lazarus, 1980; Pearlin and Schooler, 1978). Although, the variance contributed by this dimension could have been controlled by limiting it to a single sex design, the power of generalization would have been lost. It was, therefore, decided to control its influence to some extent by having equal sex representation. Each group comprised of 30 males and 30 females.
Age is another important demographic variable influencing the nature of life events experienced and the type of coping behaviours employed (Pearlin and Schooler, 1978). Developmental life span studies could best study the effect of this variable. Hence, it was decided to restrict the study to adults in the age group of 20-40 years. Life span psychologists no longer view the adult years as a period of calm moratorium, sandwiched between the tumults of the teenager and the anxieties of the aged. Instead, they are depicted as years of change, conflict and challenge (Levinson, 1978; Sheehy, 1974). Psychosocially, it is the normative period for a large number of stressful life events to occur (for example, being employed for the first time, getting married, birth of first child). It is also a crucial age for the onset of several major and minor psychiatric disorders.

Social class difference are marked in India; apart from rural-urban differences, economic disparities are very evident. Western studies (Kessler, 1979, 1979a; Pearlin and Schooler, 1978) have found social class to have a strong influence on the life events experienced and the coping behaviours used. It was, therefore, decided to limit the study to urban, educated subjects representative of the large 'middle class' in India.

To sum up, males and females hailing from an urban background in the age group of 20-40 years, with a minimum of 10 years schooling and a working knowledge of English were
eligible for inclusion in the study.

The first group comprised of 60 patients (30 males and 30 females) diagnosed as having a neurotic disorder according to ICD-9, the classificatory system in use in India. However, cases were limited to the first five disorders in this group, namely Anxiety state (300.0), Hystera (300.1), Phobic state (300.2), Obsessive-compulsive disorder (300.3) and Neurotic depression (300.4) as these are more frequently seen and at an early stage, than the other categories of Neurasthenia (300.5), Depersonalization Syndrome (300.6) and Hypochondriasis (300.7).

Patients were taken from the walk-in clinic of the Department of Psychiatry, National Institute of Mental Health and Neuro-Sciences, Bangalore, India. The clinic functions 6 days a week, Monday through Saturday, between 8 a.m. and 12 noon. Its services were free at the time of study. The clinic is manned by consultants and residents of the Department of Psychiatry. Referrals are made by other departments in the Institute (Neurology and Neurosurgery), other hospitals and local physicians. Most of the patients are, however, self-referred and hail from an urban background (Ray, Beig and Gopinath, 1982). The clinic aims to screen the cases, arrive at a clinical diagnosis according to ICD-9, and provide immediate help. After a brief work up, all cases are discussed with the consultant psychiatrist. The diagnosis and therapeutic management is chalked out and a subsequent
appointment given for detailed evaluation. On an average, approximately 150 new patients are seen each week. Due to time constraints, and other clinical responsibilities of the investigator, it was not feasible to collect cases on all working days. Three days of the week: Tuesday, Thursday and Friday were chosen according to the convenience of the researcher. There is no evidence to suggest that these days of the week differed from the other three days in terms of case load, type of cases or introduced any other bias.

The consultants in charge of these three walk-in clinic days were briefed about the purpose of the study and their co-operation sought. The inclusion and exclusion criteria were clearly specified as follows:

**INCLUSION CRITERIA**

1. Male/Female
2. 20-40 years
3. 10 years of schooling
4. Working knowledge of English
5. Urban background
6. Diagnosis of 300.00 to 300.4 (ICD-9)
7. Clear-cut onset of illness
8. Duration of illness less than 1 year
9. Untreated cases.
EXCLUSION CRITERIA

1. Major or minor physical illness
2. Post-surgical cases
3. Other psychiatric disorders.

The inclusion criteria ruled out any form of random sampling technique and necessitated the use of purposive sampling. The residents working up the cases were not aware of the details of the study and focussed, as usual, on eliciting symptoms, clinical history and physical examination. The consultants, at the time of case discussion, would verify the suitability of the cases with regard to the inclusion/exclusion criteria and then refer them to the investigator. Special care was taken to ensure that cases had a clear-cut onset of illness lasting less than 1 year. In the event of any doubt, the case was excluded. This was done because of its importance in the study design where life events were studied for a two year period and the period of illness excluded from this. In addition, only untreated cases were seen as it was felt that an earlier consultation might influence the reporting of coping behaviours.

The second group comprised of 60 normal subjects, 'normality' being defined as the absence of any history of psychiatric or physical illness. In addition, they were screened on the General Health Questionnaire and those obtaining a score of below 5 were included. Life events are
known to influence both psychiatric and physical illness, and Brown (1979) suggested, that normals, free of any illness, but likely to have experienced similar life events as the experimental group be taken as controls. Barker (1976) stated that the "selection of a control group to match the patient is critical". Normal controls were individually matched on socio-demographic variables of sex, age, education and occupation with the patient group in order to make the groups comparable.

There were practical difficulties encountered in the assessment of normal controls. No system of identification of households (like census tracts) is available and residential areas are not homogenous with regard to social class or economic status. Moreover, due to the large population and widespread geographical area, random door to door selection was also ruled out. In the case of patients who were employed, similar work situations were chosen and a subject, matched on relevant variables, selected at random from those available. More than one normal subject was not taken from the same work spot to avoid bias of any kind.

In the case of non-working subjects, mainly housewives and unmarried women at home, two methods were employed. Firstly, socially active women (ladies club or organization members/social workers) in different residential areas were contacted and asked to identify a number of people with the required socio-demographic characteristics. In order to rule
out the bias of recommending more 'normal' people, they were not told the purpose of the study. The investigator selected at random one or two from this list for screening and interviewing. Secondly, normal working control subjects were asked to suggest names of non-working people (not in the same house) with the required socio-demographic characteristics and the investigator selected a few at random.

COLLECTION OF DATA

Individual informed consent from each subject was obtained to participate in the study. The investigator introduced herself as a clinical psychologist and subjects were informed that data was being collected as part of a research study on human behaviour and that the interview would last for about 2 to 3 hours. Their co-operation was earnestly sought. The patient group was, in addition, informed that it was not part of routine hospital procedure, that it had no bearing on their treatment plans and that they had the option of refusing. More specific information regarding the study was withheld, at the outset, as it was felt that it would introduce a bias in responding. Complete anonymity and confidentiality were assured to all subjects. Participation, in all cases, was purely voluntary.

All neurotic patients referred by the consultant, with one exception, agreed to participate. The high rate of compliance is noteworthy as compared to Western literature
(Barrett, 1979; Cooper and Sylph, 1973), where refusal rates are as high as 25 to 30 per cent. This is probably because of a glorified 'halo' which still exists around health care professionals in India.

In the case of normal controls, three subjects refused to participate in the study and five were rejected as they scored above the cut-off score on the GHQ. Of these, one was a known asthmatic, one had undergone a tubectomy two weeks earlier, two had high scores on the anxiety scale and one had an elevated depression scale score on the GHQ.

All subjects were interviewed individually, in a separate room at the hospital, at the work place or in their own homes. The tests were given in a semi-structured fashion and the respondents were allowed to express their thoughts and feelings without any checks. Individual attention and assistance increases the likelihood of obtaining more accurate data (Monroe, 1982a). On an average, the assessment lasted for 2 to 2\(\frac{1}{2}\) hours. However, in some cases it extended up to 3 hours or more.

The initial few minutes were spent in establishing a working-rapport and making the subject feel at ease in order to elicit total co-operation. After the first three tests were administered (EPI, I-E scale and CCL-I) the subject was given a short rest. Following this, the SLEI, the CCL-II and the GHQ were administered. The order of administration was kept constant.
At the end of the interview the investigator answered any queries of the subjects (usually quite a few!) and thanked the respondents for their co-operation. In the case of the normal subjects, information was provided as to where the investigator could be contacted during working hours.

ANALYSIS OF DATA

Research in the area of psychology and related sciences has often been criticized for the insistence on multivariate analysis and a pedantic use of significance levels. Everitt (1975) refers to this as 'misuse of statistical methods'. As the present study was mainly exploratory in nature, a precaution kept in mind was that the same sample could not be used to both generate and test a hypothesis. Williams and Dale (1965) have remarked, 'generation of the hypothesis cannot be used as its own evidence'.

It is common, in research in the behavioural sciences, to have variables recorded that are a mixture of qualitative (discrete) and quantitative (continuous) results. Therefore, before attempting any analysis, the nature and the distribution of individual variables were carefully examined. It was decided to utilize univariate statistical methods; both non-parametric and parametric. The chi-square test, with Yates' correction where necessary, Fischer's exact probability test and the Student 't' Test were applied (Herzberg, 1983). Two-tailed tests of significance were employed and the 0.05
level of significance taken as the criteria for accepting that 'real' differences exist between the neurotic and normal groups.

The results of the analysis of the data and the specific statistical techniques applied, are presented in the following chapter.