CHAPTER IV
METHODOLOGY

4.1 Sample

Sixty five doctors (N=65) and equal number of managers (N=65) participated in the present study. Doctors were selected from the private Hospital in Chandigarh. All the doctors had a master degree in different subject of medicine. The mean ± SD age of these doctors was 39.38 years and 4.88 respectively. Managers were selected from the different business organizations mainly providing services in Chandigarh. Like the doctors these managers also had a master's degree in business administration. The mean ± SD age of manager was 40.07 years and 4.97 respectively. All of them were married and belonged to middle class urban family background.

Rapport was established with the subjects to gather detailed information about them and responses were recorded on the structured questionnaire. The respondents were assured of confidential nature of the data.

4.2 Tools Used:

4.2.1 Job Content Questionnaire (JCQ) (Karasek, 1985) (Appendix-I)

The job content Questionnaire (JCQ) is a self-administered instrument designed to measure social and psychology characteristics of jobs. The best known scales (a) decision latitude, (b) Psychological demand, (c) social support are used to measure the high demand/low control/low support model of job strain development. The demand/ control model predicates, first stress related risk and, second, active passive behavioral correlates of jobs. Other aspects of works demands are assessed as well: (d) Physical demand and (e) job in security. The instrument has a recommended length of 49 questions. The job content
A questionnaire has been translated into 22 languages. The alpha reliability coefficient is .79 for the measure of job demands and 77 for job control.

In the present study our main focus is on decision latitude scale (Job Control) and psychological demand scale (Job demand).

4.2.2 A Trait Scale of State-Trait Anxiety Inventory (STAI) (Spielberger, Sharma, Singh, 1973): (Appendix-II)

In the present study, only A Trait scale is used. The original version of STAI was developed by Spielberger, Gorscush and Laushane, 1970. The STAI provides internal consistency, reliable and valid scores for measuring both state and trait anxiety.

The subjects are asked to describe how they generally feel. In response to each item the subjects rate themselves on the following 4 point scale (i) almost never, (ii) sometimes (iii) often (iv) almost always. Individual items have been selected for the A- Trait Scale on the basis of concurrent validity of each item as determined from correlation with two widely accepted trait anxiety measures. The test-retest reliability of the Hindi STAI is quite stable which ranged from 0.77 and 0.83 over a period of 30 to 90 days period. High correlation ranging 0.90, 0.71, and 0.61, with Sharma Scale IPAT Anxiety Scale and Manifest Anxiety Scale respectively provide evidence of concurrent validity of the Hindi STAI, A- Trait Scale. The STAI has more than 50 language version all over the world and therefore in an excellent tool for research on anxiety across the cultures (see Spielberger, Sydeman, 1994).

4.2.3 Anger Expression Scale (Ax/Ex Scale) (Spielberger, et al, 1985, Krishna, 1988) (Appendix-III)

The Anger Expression scale comprised of 24 items. The three sub scale assess individual difference in the tendency to (i) express anger towards other people or object in the environment (Ax/Out), (ii) experience but hold in (suppress) angry feeling (Ax/In), and (iii) Control the
experience of anger (Ax/con). The Hindi Version of Anger Expression (Ax) scales (Ax/in, Ax/out, and Ax/con) have been translated by Krishna (1988). The alpha reliabilities of English Version of Ax total, Ax/in, Ax/out, Ax/con is .96, .90, .93, .88 (males). Similarly for females these values in the corresponding order is .91, .85, .70, .88 respectively. The alpha reliability of Hindi Scale in respect to total, Ax, Ax/in, Ax/out, Ax/con are .89, .88, .62, .82 (females) and .96, .92 and .82 (males) respectively.

These highly significant alpha co-efficient also establish internal consistency of both Hindi and English version of Anger Expression (Ax/Ex) scales for males and females separately. Cross language equivalence of both versions is fairly well established. Hindi STAXI can be used for research in India and subsequent comparison of the findings with those obtained on English speaking population. In addition to its Hindi and English edition, STAXI is also available in Dutch, German, Italian, Norwegian, Finnish and Chinese language version.

4.2.4 Hindi Version of Beck’s Depression Inventory (BDI) (Kaur, 1994) (Appendix -IV)

The Hindi version of the Beck’s Depression Inventory has been developed by Rajwinder Kaur. It is a 21 item scale and is used for measuring attitudes and symptoms associated with depression. The total score ranges from 0 to 63. The original scale was developed by Beck, Ward, Mendelson, Mock and Erbaugh (1961). The BDI is a 21 item measure of symptomatic depression. Thirteen of these items measure primarily cognitive symptoms of depression (e.g., guilt, feeling of being punished, suicidal ideation) while the reaming items reflect more somatic symptoms of depression (e.g. sleep and appetite disturbances, sexual difficulties) (Crisson, Keefe, Wilkins, Cook & Muhlbaier, 1986)

The BDI is reported to possess adequate internal consistency (Upmanyu and Reen, 1990, 1991; Verdenberg, Krames and Felt, 1985).
The psychometric Characteristics of this questionnaire have been well documented in the Indian set up (Upmanu, Upmanu and Dhingra, 1992, 1993; Upmanu and Reen, 1990, 1991; Kumar, 1990; Upmanu and Singh, 1994). Kumar (1990) reported the alpha coefficient of the BDI was 0.88.

4.2.5 Subjective Happiness Scale (SHS) (Lyubomirsky and Lepper, 1999) (Appendix-V)

The Subjective Happiness Scale (SHS) used in the study comprised of 4 items. Two items ask respondents to characterize themselves using both absolute rating and rating relative to peers, while the other two items offer brief description of happy and unhappy individuals and asks respondents to extend to which each characterization describes them. Thus, the Subjective Happiness Scale consists of multiple items allowing for an assessment of internal consistency.

The 4-item subjective happiness scale was derived from an original pool of 13 self reported items. The Subjective Happiness Scale has demonstrated high internal consistency (Cronbach’s as range from .85 to .95 in seven different studies), a unitary structure and high test-retest stability (Pearson’s r = .90 for 4 weeks and .71 for 3 months)

4.3 Data Collection Procedure

Each scale was administered to the subjects individually. The scale was administered accordingly with the standard instructions and arranged in the following order:

1) Job Content Questionnaire (JCQ) (Karasek, 1985)
4) Beck’s Depression Scale (BDI) (Kaur, 1994).
5) Subjective Happiness Scale (SHS) (Lyumbomirsky and Lepper, 1994).

The cover sheet of the scale elicited the demographic data about age, sex and year in service. The subjects who responded to the test items followed the standard instructions pertaining to each scale.

Subjects were assured that their results would be kept confidential and would be used only for research purpose.

4.4 Scoring

4.4.1 Scoring of Job Content Questionnaire

All questions were scored on a Likert scale of 1 to 4, and both decision latitude (Job Control) and psychological job demands were constructed to have a range of 12 to 48. Subjects respond on 4 points i.e. strongly agree, agree, disagree and strongly disagree.

Question No. 12, 13 and 14 are reverse coded.

Skill discretion scale and decision making authority scale is combined to get the score of Job decision Latitude. Job decision latitude ranges from 24-96. Scores are calculated by using the following formula:

1) Job Skill discretion
   
   \[ (q_1+q_3+q_5+q_7+q_9+(5-q_2)) \times 2 \]

2) Job decision making authority
   
   \[ (q_4+q_6+(5-q_8)) \times 4 \]

3) Job demand
   
   \[ 3 \times (q_{10}+q_{11})+2 \times [15-(q_{12}+q_{13}+q_{14})] \]

4) Job decision latitude or Job control = Skill discretion + decision making authority
4.4.2 Scoring of A Trait Scale of STAI

Responses to the statements of A Trait scale of the STAI were obtained on 4 point scale. The category for the A-Trait scale has seven reversed items and 13 directly scored items.

The items numbered, 21, 26, 27, 30, 33, 36 and 39 are reversed scored items. On the item the rating are considered in the reverse order to the ratings on the other items. For example, if a respondent encircled the figure 4 on any one mentioned item then the score on that item was considered as 1. The scores on all items were summed up to obtain total scores.

4.4.3 Scoring of State Trait Anger Expression (STAXI)

The scale of 24 items yielded 4 scores. The S-anger and t-anger was not included in this study. The scale of STAXI assesses the intensity of angry feeling at particular time the individual differences in the tendency to express anger. Anger expression scale comprises of 8 items each.

Anger In (Ax/In)   23, 25, 26, 30, 33, 36, 37, 41
Anger Out (Ax/Out) 22, 27, 29, 32, 34, 39, 42, 43
Anger Control (Ax/Con) 21, 24, 28, 31, 35, 38, 40, 44

The scores on each item corresponded to the number encircled on the test form. Thus the item score on An/In, Ax/Out and Ax/Con scales are computed by summing the column scores for minimum of 10 to the maximum of 40 and their range of possible scores for the 3 anger expression scale (Ax/In, Ax/Out, Ax/Con) varies from 8 to 32. For the computation of AX/Ex scores a constant (C = 16) is added for eliminating the negative score (Spielberger, 1988). Ax/Ex score ranged from 0 to 72. The following equation is used to calculate Ax/Ex.

\[ Ax/Ex = Ax/Out + Ax/In - Ax/Con + 16 \]
Subjects with Ax/In scores frequently express intense angry feeling, but suppressed their feelings. However some persons high in Ax/In may also have Ax/Out score frequently expressed in aggressive behaviour towards other people in objects. The subjects with high Ax/Con scores work towards preventing the experience of intense angry feelings, which might be suppressed or expressed in aggressive behaviour or both person with high Ax/Ex scores is also high Ax/In and Ax/Out scores manifest in interpersonal relationship and may also develop medical disorder

4.4.4 Scoring of Beck's Depression Scale

The Beck's Depression Inventory is a 21-item scale each item is scored from 0-3 and all items are summed to produce a total score that may range from 0 to 63 higher score greater severity of depressive symptomology. A typical item is as follows:

0- I can sleep well as usual
1- I wake up more tired in the morning than I used to
2- I wake up 1-2 hours earlier than usual and find it hard to get back to sleep
3- I wake up early every day and cannot get more than 5 hours sleep

4.4.5 Scoring of Subjective Happiness Scale (SHS)

The 4 item of subjective happiness was scored on the bases of response format on 7 point Liker Scale.

A single composite score for global subjective happiness computed by over aging responses to the four items (the fourth reverse coded). Thus, the possible range of scores on the subjective happiness scale is from 1.0 to 7.0 with higher score reflecting greater happiness. The scores range between 4 to 28.
4.5 Statistical Analysis

1. Scores were subjected to 't' test to compare the doctors and managers with regard to Job Demand-Control, Modes of anger expression (Ax/In, Ax/Out, Ax/Con), trait anxiety, depression and subjective happiness.

2. Interrelationship between the Job Demand-Control, Modes of anger expression (Ax/In, Ax/Out, Ax/Con), trait anxiety, depression and subjective happiness among doctors and managers were carried out separately using Pearson Product Moment Correlation Analysis.

3. Stepwise Discriminant Analysis was used for interpretation purpose. The two groups studied are doctors and managers.

Stepwise discriminant analysis (Cooper and Weeks, 1983, Huberty, 1984, Klecka, 1985, Nunnally, 1967, Tatsuoka, 1971) is a standardized technique which allows the researchers to study the difference between two or more groups of objects with respect to several variables simultaneously. Discriminant analysis is a broad term which refers to several closely related statistical activities which can be divided into those used for interpreting the group differences and those employed to classify cases into the group.

In the present study, Discriminant Analysis is used primarily for interpretation purposes, and secondarily for classification. SPSS-PC + Statistical package (Nie, Hull, Jenkins, Steinbrenner & Bent, 1975) was employed for this purpose (see also Klecka, 1985). The two groups studied are doctors and managers. The characteristics used to distinguish among the groups are called discriminating or discriminant variables measured at the interval or ratio level. There is no limit on the number of dependent variables as long as the total number of cases exceeds the number of variables by more than two (Klecka, 1985).
Variables were included as potential discriminators of the doctors and managers. Anger Expression (AX/EX) was not included in the analysis because this total score on the STAXI is a linear combination of its subscales scores (Ax/In, Ax/Out, Ax/Con).

Amongst other SPSS-PC + statistical Package (1996) was employed which provides:

- **F to Remove**, indicating the rank orders of the unique discriminating power carried by each of the selected variables. The variables with largest F-to- Remove makes the greatest contribution to overall discrimination above and beyond the contribution already made by the other variable(s).

- **Wilk’s Lambda**, is a multivariate measure of group differences over several discriminating variables. It also takes into consideration both differences between groups and cohesiveness or homogeneity within the group. The value of Wilk’s Lambda range from 1 to 0, as it decreases in magnitude discrimination between two group’s increases. Each Wilk’s decrement between successive steps represents the unique contribution of that variable to the equation above and beyond the contribution of preceding variables.

- **Standardized Discriminant Coefficient (SDF Coefficient)**, suggest the relative contribution of discriminant variables in separating the two groups.

Statistical analysis was done on Pentium based machine using SPSS (Statistical Package of Social Sciences, Nie et al, 1975)