CHAPTER III

METHOD

The review of literature on various perspectives of occupational stress, burnout and well-being provided some insightful observations on the role of different interventions to facilitate change with regard to the variables under study. Based on the review of literature, several hypotheses were formulated and the research design was finalized to meet the key objectives of the study. The following sections details the research methodology and the statistical methods followed to arrive at reliable results and facilitate proper analysis.

Section I : lists the specific hypotheses to be tested in the proposed study.

Section II : presents the research design outlining the nature of the interventions targeted at hospital managers and the type of variables observed before and after the intervention.

Section III : details the sampling design.

Section IV : introduces the appropriate research instruments used to assess the criterion variables before and after the intervention. This section further details the type of interventions administered to the sample.

Section V : details the method of data collection.

Section VI : discusses the types of statistical techniques adopted to test the hypotheses.
Section 1: Hypotheses

Based on the review of literature, the following alternate hypotheses were made which will be subjected to statistical analysis.

H₁: There will be a significant reduction in Occupational Stress after the intervention for all the four categories of Professional Managers

H₂: There will be significant category differences in Occupational Stress after the intervention among the four categories of Professional Managers

H₃: There will be a significant reduction in Burnout after the intervention for all the four categories of Professional Managers

H₄: There will be significant category differences in Burnout after the intervention among the four categories of Professional Managers

H₅: There will be a significant improvement in General Well-Being after the intervention for all four categories of Professional Managers

H₆: There will be significant category differences in General Well-Being after the intervention among the four categories of Professional Managers

Section II: Research Design

This study followed a 4 X 3 Mixed Factorial design. Twenty five Male and twenty five Female Professional Managers from a Private Hospital and twenty five Male and twenty five Female Professional Managers from a Cooperative Hospital comprised the four groups for the study. The four groups were assessed at three points of time; pretest phase, posttest phase and one month after the intervention was withdrawn: follow up phase.
The within-subjects factor was the three phases of testing or time and the between-subjects factor was the category of Professional Managers; Male Professional Managers from a Private Hospital, Female Professional Managers from a Private Hospital, Male Professional Managers from a Cooperative Hospital and Female Professional Managers from a Cooperative Hospital. A graphical representation of the design is presented in figure 2.

Figure 2 Mixed Factorial Experimental Design Used for the Study – Graphical Representation
A mixed model factorial ANOVA was used to analyze differences over time and between the four categories of hospital managers.

**Section III: Sampling Design**

Targeting professional managers in a Private Hospital and a Cooperative Hospital with a purpose of reducing their occupational stress and burnout and improving their general well-being is a challenging task. A comprehensive intervention comprising of Jacobson’s Progressive Muscle Relaxation, Systematic Desensitization and Counseling was administered to Male and Female Professional Managers with the intention of reducing stress and burnout and further enhancing their general well-being.

As it was intended to conduct a mixed factorial design with the subjects receiving intervention for a period of three months and assessing them at three points of time; before intervention, after intervention and one month delayed follow up, 100 hospital staff working in managerial roles were purposively identified from one private hospital and one cooperative hospital in Malappuram District, Kerala.

25 Male and 25 Female managers from a private hospital and 25 Male and 25 Female managers from a cooperative hospital were approached to be a part of the intended study and were categorized as four groups; Male Managers Private Hospital (n=25), Female Managers Private Hospital (n=25), Male Managers Cooperative Hospital (n=25) and Female Managers Cooperative Hospital (n=25).

Those staff with at least two years of working experience in the same institution were selected after receiving informed consent and briefing them about the study, intervention and potential benefits and risks of participation. All the participants received the same type of intervention for a period of three months.
The following inclusion and exclusion criteria were employed to screen managers for the experiment.

**Inclusion Criteria**

1. Staff members in a managerial role with more than two years of experience in the same hospital.

2. Staff members in a managerial role with more than 5 staff members working under their supervision.

**Exclusion Criteria**

1. Staff members who were not able to perform the relaxation exercise.

2. Staff members who were having any systemic illness.

**Operational Definitions**

1. Occupational Stress is the relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being (Lazarus & Folkman, 1984). This study measures occupational stress as the summative value arrived using the Occupational Stress Index (Srivastava & Singh, 1984) and comprised of twelve dimensions (Appendix –II).

2. Burnout is a syndrome of emotional exhaustion, depersonalization and reduced personal accomplishment that can occur among individuals who do ‘people work’ of some kind (Maslach & Jackson, 1981). The Maslach Burnout Inventory developed by Maslach and Jackson (1981) has three subscale which represent a related (Emotional Exhaustion and Depersonalization) and independent (Personal
Accomplishment), but separate multidimensional concept of the burnout construct (Maslach & Jackson, 1981). This study measures the three subscales separately using the Maslach Burnout Inventory as well as total burnout (Appendix –III).

3. General Well-Being is the subjective feeling of contentment, happiness, satisfaction with life’s experiences, sense of achievement, utility, belongingness and free from distress, dissatisfaction or worry. General Well Being may be related to but not dependent on physical or physiological conditions. This study uses the WHO-5 Well-Being Index 1998 version (WHO, 2000) to measure General Well-Being as a summative score in the Index (Appendix –IV).

4. Professional Managers are those staff members working in a Hospital who additionally assume the managerial function or role and have at least 5 staff members working under them. Professional Managers may include doctors, nurses, ward supervisors, pharmacists, laboratory in-charge, heads of diagnostic departments etc.

5. Health service institutions include private and cooperative hospitals with a minimum of 50 beds and providing all life saving measures.

**Section IV: Measures**

**Occupational Stress Index**

Work stress is one of the most serious occupational health hazards reducing workers satisfaction and productivity. Hospital staff in particular is subject to work related stress because of a rapidly changing environment (Al-Aameri, 2005). The increasing interdependence of work and health has been recognized in almost all
industrialized societies. Work stressors are responsible for a myriad of ill health effects of employees at all levels in an organization and in many difficult jobs, organizations and industries (Cooper, 2001).

Individually, stress leads to diminished creativity, stagnation of personal development, negatively affects work motivation, diminishes the quality of social relations, resulting in conflicts and isolation, diminished pleasure and well-being. As a result, overall individual effectiveness can be greatly diminished leading to psychological and physical complaints and illnesses (Schabracq et al., 2003).

Identifying stress complaints with the help of interviews and surveys can be used as a technique to trace bottlenecks, other systemic errors in the organization and provide necessary interventions and suggestions to possible solutions and improvements. This might facilitate solving individual complaints, which then enables a better adaptation to the outside world in general.

The Occupational Stress Index developed by Srivastava and Singh (1984) was used to measure the extent of job related stress as arising from various constituents and conditions of jobs. The items on the scale relate to most of the relevant components of a hospital manager’s daily work that can potentially cause stress. The authors explain that the instrument may be conveniently administered to employees of all levels working in various organizations. However, it is more suitable for employees working at the supervisory level and above. This scale has been found to have high reliability and has proved its validity therefore it was used for this study.
The scale consists of 46 items, comprising 28 `true-keyed’ and 18 `false-keyed’ and each of which is rated on a five-point scale. The items are related to almost all relevant components of job life which cause stress in some way or other.

**Table 1**

*Items belonging to the various subscales of the Occupational Stress Index*

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Serial Number of the item in the OSI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role Overload</td>
<td>1, 13, 25, 36, 44, 46</td>
</tr>
<tr>
<td>Role Ambiguity</td>
<td>2, 14*, 26, 37</td>
</tr>
<tr>
<td>Role Conflict</td>
<td>3, 15*, 27, 38*, 45</td>
</tr>
<tr>
<td>Unreasonable Group and Political Pressures</td>
<td>4, 16, 28, 39</td>
</tr>
<tr>
<td>Responsibility for Persons</td>
<td>5, 17, 29</td>
</tr>
<tr>
<td>Under Participation</td>
<td>6*, 18*, 30*, 40*</td>
</tr>
<tr>
<td>powerlessness</td>
<td>7*, 19*, 31*</td>
</tr>
<tr>
<td>Poor Peer relations</td>
<td>8*, 20, 32*, 41*</td>
</tr>
<tr>
<td>Intrinsic Impoverishment</td>
<td>9, 21*, 33*, 42</td>
</tr>
<tr>
<td>Low Status</td>
<td>10*, 22*, 34</td>
</tr>
<tr>
<td>Strenuous Working Conditions</td>
<td>12, 24, 35, 43*</td>
</tr>
<tr>
<td>Unprofitability</td>
<td>11, 23</td>
</tr>
</tbody>
</table>

Note: * false keyed items

Depending whether the item is true keyed or false keyed they are scored as follows
**Table 2**

*Scoring Key for the Occupational Stress Index*

<table>
<thead>
<tr>
<th>Category of response</th>
<th>True Keyed</th>
<th>False Keyed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never/ Strongly Disagree</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Seldom/ Disagree</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Sometimes/ Undecided</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Mostly/ Agree</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Always/ Strongly Agree</td>
<td>5</td>
<td>1</td>
</tr>
</tbody>
</table>

The internal consistency measure using Cronbach’s alpha for the various dimensions of the scale is listed in table 3.

**Table 3**

*Reliability coefficients of the subscales of the Occupational Stress Index*

<table>
<thead>
<tr>
<th>Sub Scales</th>
<th>Cronbach’s alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role Overload</td>
<td>.812</td>
</tr>
<tr>
<td>Role Ambiguity</td>
<td>.762</td>
</tr>
<tr>
<td>Role Conflict</td>
<td>.805</td>
</tr>
<tr>
<td>Unreasonable Group and Political Pressure</td>
<td>.793</td>
</tr>
<tr>
<td>Responsibility for persons</td>
<td>.771</td>
</tr>
<tr>
<td>Under-participation</td>
<td>.785</td>
</tr>
<tr>
<td>Powerlessness</td>
<td>.781</td>
</tr>
<tr>
<td>Poor-Peer Relations</td>
<td>.731</td>
</tr>
<tr>
<td>Intrinsic Impoverishment</td>
<td>.822</td>
</tr>
<tr>
<td>Low Status</td>
<td>.756</td>
</tr>
<tr>
<td>Strenuous Working condition</td>
<td>.723</td>
</tr>
<tr>
<td>Unprofitability</td>
<td>.784</td>
</tr>
</tbody>
</table>
This scale examines 12 particular dimensions to estimate the level of occupational stress experienced by the respondents. Brief descriptions of the dimensions are given below.

1. Role overload: Role overload covers job situations like workload, staff insufficiency, lack of time, personal problems, job dissatisfaction, etc. It contains items such as ‘I have to do a lot work in this job’.

2. Role ambiguity: Role ambiguity is characterized by vague and insufficient information related to job role, vague and poor planning of job, vague expectations by colleagues and supervisors, etc. This dimension contains items such as ‘The available information relating to my job-role and its outcomes are vague and insufficient’.

3. Role conflict: Contradictory instructions from higher officers, interference of officials into the working conditions, vague instructions and insufficient facilities regarding new assignments, contradiction between office instructions and formal working procedures, difficulty in implementing new procedures and policies, etc., are included in this dimension. This dimension contains items such as ‘My different officers often give contradictory instruction regarding my work’.

4. Group and political pressures: This dimension covers the difficulty to adjust with the political and group pressures and formal rules and instructions, compulsion to perform unwillingly, maintenance of group conformity, violation of formal procedures and policies, etc. This dimension contains items such as ‘I have to do some work unwillingly owing to certain group/political pressures’.
5. Responsibility for persons: This dimension covers such aspects as the thrust of responsibility of other persons, the responsibility of other employees’ future, responsibility for the progress of organization, etc. This dimension contains items such as ‘The responsibility for efficiency and productivity of many employees is thrust upon me.’

6. Under-participation: This dimension covers job areas such as the position of the person in the organization - that with high or low power and the acceptance of suggestions made by other persons, etc. This dimension contains items such as ‘Most of the suggestions are heeded and implemented here’.

7. Powerlessness: This dimension covers areas such as acceptance of decisions taken by the person among employees, acceptance of suggestions regarding training programs of employees, lack of coordination of interest and opinion in making appointments for important posts, etc. This dimension contains items such as ‘Our interests and opinion are duly considered in making appointments for important posts’.

8. Poor peer relationships: The area covered under this dimension refers to poor interpersonal relationships with colleagues, colleagues’ attempt to defame and malign the employee as unsuccessful, colleagues’ lack of cooperation in solving administrative and industrial problems, lack of cooperation and team spirit of employees of the organization, etc. This dimension contains items such as ‘I have to work with persons whom I dislike’.

9. Intrinsic impoverishment: Monotonous nature of assignments, opportunity to utilize abilities and experience independently, opportunity to develop aptitude and
proficiency, place of suggestion in problem solving, etc., are included in this dimension.

This dimension contains items such as ‘My assignments are of monotonous nature’.

10. Low status: This dimension covers respect received by an employee from others, the role of nature of the job in enhancing social status, due significance given by higher authorities to the post and work, etc. This dimension contains items such as ‘Higher authorities do care for my self-respect’.

11. Strenuous working conditions: This dimension covers tense circumstances in which work has to be done, risky and complicated assignments, unsatisfactory working conditions from the point of view of welfare and convenience, etc. This dimension contains items such as ‘I do work under tense circumstances’.

12. Unprofitability: Low salary, absence of rewards, lack of motivation, etc., are included here. This dimension contains items such as ‘I get less salary in comparison to the quantum of my labor/work.’

The total Occupational Stress score can be obtained by summing across all the items which ranges from 46 to 230.

**Maslach’s Burnout Inventory**

In 1974, Freudenberger coined the term “burnout” to describe workers’ reactions to the chronic stress common in occupations involving numerous direct interactions with people. Burnout has been defined as a specific kind of occupational stress in human service professionals, which results from the demanding and emotionally charged relationships between caregivers and recipients (Maslach & Jackson, 1986).
Health sector personnel generally are considered at high risk of work-related stress, and burnout is considered to be a major concern in the field of occupational health (Shimizu et al., 2003). Health care personnel experience considerable stress in their job because they have long working hours, a wide range of tasks, and complicated relationships with patients, their families, doctors, and other co-workers (Maslach et al., 2001). The demand for acute care services is increasing concurrently with changing career expectations among hospital staff contributing to dissatisfaction among them. Burnout remains a significant concern in hospital service delivery, affecting both individuals and organizations.

A key aspect of burnout syndrome is increased feelings of Emotional Exhaustion; as emotional resources are depleted, workers feel they are no longer able to give of themselves at a psychological level. Another aspect of the burnout syndrome is the development of depersonalization; negative, cynical attitudes and feelings about one’s clients. A third aspect of the burnout syndrome, reduced Personal Accomplishment, refers to the tendency to evaluate oneself negatively, particularly with regard to one’s work clients. Workers may feel unhappy about themselves and dissatisfied with their accomplishments on the job. Burnout can lead to deterioration in the quality of care or service provided by the staff. It appears to be a factor in job turnover, absenteeism, and low morale. High scores on Emotional Exhaustion and Depersonalization and low scores on Personal Accomplishment are indicative of burnout. The subscales represent a related (Emotional Exhaustion and Depersonalization) and independent (Personal Accomplishment), but separate multidimensional concept of the burnout construct.
The Maslach Burnout Inventory (MBI) (Maslach & Jackson, 1981) was used to measure respondents’ perceived experience of burnout in relation to the recipients of their service, care or treatment. The MBI consists of 22 items phrased as statements about personal feelings and attitudes, which is self-scored on a seven-point frequency scale, ranging from 0 (never) to 6 (every day). The three subscales of the Maslach Burnout Inventory were:

*Emotional Exhaustion* refers to the depletion of emotional resources and feelings that the individual is no longer able to give. This subscale contains 9 items such as ‘*I feel emotionally drained from my work*’.

*Depersonalization* refers to negative, cynical attitudes and feelings about one’s clients. This subscale contains 5 items such as ‘*I feel I treat some recipients as if they were impersonal objects*’.

*Personal Accomplishment* refers to the tendency to evaluate oneself particularly with regard to one’s work clients. This subscale contains 8 items such as ‘*I have accomplished many worthwhile things in this job*’.

The following table lists the scoring key of the Maslach Burnout Inventory (1981)

**Table 4**

*Items belonging to the subscales of the Maslach’s Burnout Inventory*

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional Exhaustion</td>
<td>1,2,3,6,8,13,14,16,20</td>
</tr>
<tr>
<td>Depersonalization</td>
<td>5, 10,11,15,22</td>
</tr>
<tr>
<td>Personal Achievement</td>
<td>4,7,9,12,17,18,19,21</td>
</tr>
</tbody>
</table>
Internal Consistency was estimated by Cronbach’s alpha coefficient. Table 5 lists the reliability coefficient for the subscales.

Table 5

*Reliability Coefficients for the subscales of Maslach’s Burnout Inventory*

<table>
<thead>
<tr>
<th>Sub Scale</th>
<th>Cronbach’s alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional Exhaustion</td>
<td>.801</td>
</tr>
<tr>
<td>Depersonalization</td>
<td>.754</td>
</tr>
<tr>
<td>Personal Achievement</td>
<td>.722</td>
</tr>
</tbody>
</table>

**WHO-Five Well-Being Index (WHO-5)**

Mental health has been described as: “a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community” (WHO, 2001, p. 1). Frequent reorientation and adaptation both at the organizational and individual level are needed to prevent the detrimental effects of the rapid and frequent changes in the work environment on employees’ well-being and health, as well as on organizational outcomes such as low productivity, poor morale, high turnover and sickness absence (Sockoll & Kramer, 2010).

Employees working in a high strain job characterized by high demands and low control experience the lowest well-being. In a demanding situation, the options are to lower demands or/and to enhance the resources of employees. When health professionals are satisfied with their jobs, rates of absenteeism and turnover decrease, staff morale and productivity increase, and work performance as a whole improves (ICN, 2007).
The 5 item Well-being Index 1998 version by WHO (2000) was utilized as the questionnaire concerning emotional state and well-being. The WHO Well-being Index is an excellent indicator of depression and overall emotional functioning by covering various emotions, from positive emotions; feeling content and relaxed, exuberance; being physical active and feeling refreshed in the morning, to general attentiveness and interest. It assessed five simple questions relating to cheerfulness, calmness, feelings of vigor, feelings of being well rested after sleep, and interest. It contained items such as ‘I have felt calm and relaxed’. The subjects rated each question based on his or her feelings over the preceding 2 weeks. The items were scored using a likert type scale; 1: Always, 2: Mostly, 3: Less than a week, 4: Sometimes, 5: Never. to indicate the respondents’ emotional state and level of well-being.; The total ranges from 0 to 25. The internal consistency measure using Cronbach’s alpha for this scale was 0.89.

Section V: Method of Data Collection

The data collection process was carried out in three phases; pretest phase before the intervention, posttest phase after three months of intervention and follow up phase after one month of withdrawal of the intervention for both female and male managers from a private hospital and cooperative hospital in a systematic way.

Informed Consent and Voluntary Participation: The questionnaires were administered to the respondents personally, once the permission to approach the respondents was granted by the concerned hospital authorities. Informed consent for undergoing the intervention was obtained from the concerned respondents. The respondents were included based on their willingness and voluntary participation in the study. Wherever possible, the investigator verbally outlined the purpose of the study highlighting what
would be required from the participants. Further, it was ensured that their responses would be kept confidential and participation in the study would be voluntary. The respondents were clearly informed that participation would not lead to gaining any credit or additional benefits while assessing for promotion or salary increments. All the clarifications and queries raised by the respondents were resolved.

**Pilot Study:** A pilot study was carried out on a sample of 30 nurses in a supervisory capacity working in a hospital in Malappuram, Kerala. The following were the objectives of the Pilot Study:

- To pre test the research instruments of the study
- To establish the reliability of the tools and standardized questionnaires
- To ensure whether the tools were fulfilling the conceptual frameworks and the methods adopted were effective.
- To check whether the procedure was followed systematically as planned.
- To fine tune the intervention procedures

**Phase I: Pretest**

During this phase, data on the psychological criterion factors were collected from the hospital managers using the standardized questionnaires/inventories. The pretest was carried out during the months of December/January 2011. As it was intended to collect data on professional hospital managers’ stress, burnout and well-being the Occupational Stress Index, Maslach’s Burnout Inventory and WHO Well-being Index were given to the managers with the request to complete and return the instruments to the investigator immediately.
Due care was taken to maintain a good rapport with the respondents and all the doubts raised by them were clarified while filling up the questionnaires. They were informed that they would be approached once again, after three months to furnish similar type of responses soon after the completion of the intended intervention.

Phase II: Intervention

The multimodal intervention used in this study consisted of three main components such as i) Systematic Desensitization: Systematic desensitization is the gradual counter conditioning of anxiety using relaxation as the incompatible response. The procedure, originally developed by Wolpe (1958), is one of the most powerful tools in behavior modification. Desensitization comprises of training in relaxation, construction of hierarchies, visualization and counter conditioning. ii) Relaxation Training: Since relaxation was to be used as the incompatible response in counter conditioning anxiety, a modified version of Jacobson’s (1938) muscle relaxation method; Mishra (1974), was used to induce autonomic relaxation in the subject. Training in muscle relaxation was desirable because it provided learning an additional useful self-control skill and provided a level of relaxation that allows the subjects gradually becoming relaxed during the counter conditioning sessions. iii) Counseling: The didactic counseling sessions consisted of educating the managers on the importance and relevance of understanding organizational policies, the benefits of organizing personal space, the advantages of developing a healthy lifestyle, the benefits of establishing and maintaining appropriate social support, the importance of controlling emotional reactions, the short term and long term benefits of goal setting, time management and leisure time activities, and the importance of assertive behavior in contrast to passive and aggressive behavior.
The three components of the multimodal intervention is further elaborated in the following paragraphs.

**Systematic Desensitization**

After the anxiety-eliciting stimuli were determined, they were divided into groups according to common themes. Stimuli can be categorized according to a central theme, as in a *thematic hierarchy*. Wolpe (1958) suggested that it was unusual for a subject to have more than four such categories. For example, one person may feel anxious about being criticized, about being self-conscious, and about being misunderstood. For this person these fears may center on the general theme of fear of adverse social evaluations. Some stimuli may be grouped according to a specific event, such as a death of a loved one or a divorce.

After the fears and sources of anxiety were grouped, it was necessary to decide which needed to be counter conditioned. Some fears were adaptive fears and needed to be left alone. Some fears were based on misconceptions or faulty perceptions and were handled by an educative approach in the counseling sessions. Other fears were un-adaptive fears, based on experiences and emotional associations than misconceptions. These were taken up for desensitization.

*Construction of Hierarchies:* The next step was to take each category of anxiety stimuli and arrange them into a hierarchy, a rank ordering of the stimuli according to the amount of anxiety they elicit, with the items producing the most anxiety at the top of the hierarchy. The construction of the relevant hierarchies took 1-3 sessions and the subjects were concurrently given practice in relaxation procedures. The subjects’ subjective estimate about how much anxiety they would experience in each actual situation was
elicited. To facilitate this subjective report, Wolpe suggested an anxiety scale in which the top of the scale (100) corresponds to the worst anxiety the subject can imagine and the bottom of the scale (0) corresponds to no anxiety. This scale is called the SUDS or the Subjective Unit of Disturbance Scale, the unit of the scale is a SUD (Subjective Unit of Disturbance). The subject can then report his feeling of anxiety in terms of suds.

Visualizing Scenes: After the appropriate hierarchies were constructed and the subject learned to relax to the extent that he/she can relax relatively well and quickly, anxiety was reduced through counter conditioning. This consisted of slowly moving up through the hierarchy while keeping the subject relaxed. The subjects were asked to approach the items in the hierarchy by imagining being in the situation, living it as realistically as possible. The investigator started by describing the scene in some detail while the subject imagined the scene. Desensitization involving only imagined scenes generalizes well into real life situations.

Counter Conditioning: During counter conditioning it was necessary to have a measure of how much anxiety an item from the hierarchy elicits; this measure was the basis for deciding when to move to the next item. The two most common measures are physiological measures and subject’s reports. When the subject was reporting anxiety, it was important that he/she did not disrupt the relaxed state. The amount of anxiety was determined by asking the subject to lift his/her finger to questions about how many suds the item elicited.

The first item presented was a neutral item, following a no-anxiety presentation of the neutral item, the subject was presented with the lowest item on the hierarchy. The subject imagined this until he/she signaled, by lifting his/her right index finger,
indicating feelings of anxiety. If the subject imagined the hierarchy scene for about ten seconds without signaling anxiety, he/she was again told to “Stop the scene and relax”. Each item on the hierarchy was presented repeatedly until it no longer elicited any anxiety; a common criterion was that subjects imagined the scene two successive times without signaling anxiety. At this point, the next item on the hierarchy was presented until it was counter conditioned and so on through the whole hierarchy. The subject determined the rate at which he/she moved through the hierarchy. A safe and sure approach was followed by staying with each item until it elicited no anxiety in the subject.

In this way it was possible for the subject to eventually handle formerly noxious stimuli without any anxiety whatsoever. This ability to imagine the noxious stimulus with tranquility then transfers into real life situations.

**Progressive Muscle Relaxation (PMR):** One of the early advocates of progressive relaxation was Dr. Edmund Jacobson (1938). Progressive Muscle Relaxation (PMR) involves tensing and relaxing, in succession, the different muscle groups of the body. The idea was to tense each muscle group hard for about 10 seconds, and then to let go of it suddenly. The progressive muscular relaxation training was administered to the subjects for about 30 minutes every day.

**Modified version of the Jacobson’s Progressive Muscle Relaxation (Mishra, 1974)**

The subjects were taught the progressive muscle relaxation initially before systematic desensitization so as to learn a coping skill and to maintain a relaxed state. Jacobson’s Progressive Muscular Relaxation training modified by Mishra (1974) to suit
Indian conditions was used in this study. The procedure and steps in the modified version of the progressive muscle relaxation is elucidated in the following paragraphs.

The managers were told that they would be taught a series of relaxation exercises which when practiced daily would result in deep levels of relaxation and calm feeling. It was ensured that the setting where the exercise was conducted was kept quiet and the lighting dim and the instructions were given in a calm soothing voice. The managers were asked to keep their eyes closed, to be mentally calm and to concentrate on those feelings and sensations which accompany changes in muscle tension and relaxation.

Progressive relaxation was given in 5 stages.

1. Relaxation of arms

2. Relaxation of the facial area, neck shoulders and upper back

3. Relaxation of chest, abdomen and lower back

4. Relaxation of hips, thighs and lower back

5. Complete body relaxation

The following were the instructions for the modified version of the Jacobson’s Progressive Muscular Relaxation training developed by Mishra (1974).

“Now take a comfortable position on the bed…… lie down on the bed as comfortably as you can on your back, with all parts of your body loose .... light.... and free.. Be calm and comfortable. keep your eyes closed tightly. Now let us start the practice.... as you go head and body.... observe the changes, tightness and the development of light soothing sensations within. Avoid stray thoughts as best as you can be calm quiet and still on the bed. Avoid extra movements of the body. Now make your body completely loose... light.... and free.
1. Clinch your right fist... as tightly as you can... tightness or tension within your palm muscles...hold it for some time, slowly release it... make it completely free and light... within feel the lightness of your palm ...good,.... keep the body loose and light.... be calm and relaxed. Repeat it again .... slowly release it... You can ..... now observe the tension within.... slowly release it... make it free and light,,,, feel the soothing lightness, within and be relaxed.... till you feel more calm and relaxed. Breathe freely and gently.

2. Now clinch your left fist hold it for some time .... feel the tension and slowly make it loose, light and free... observe the soothing sensation within and be calm and relaxed. Be still more relaxed.... keep the entire body loose and light. Repeat it again .... still more.... lightly.... observe the soothing sensation within and be calm and relaxed.... keep the body still more light and free.... concentrate on the feelings from within.

3. Now clinch both fists at a time ... as tightly as you can .... feel the tension and slowly release then.... observe the difference... feel the lightness in your palm and be relaxed.... make it completely loose and light. Feel the soothing sensation and be relaxed. Now be calm and relaxed.... Observe the lightness growing in your hands and be relaxed, still more relaxed.

4. Now clinch your fists and bend your arms.... tighten your arm muscles .... as tightly as you can ... feel the tightness of your arm muscles .... make them loose and tight ... let your hands be straight, free and light, observe the light feeling within your muscle of the arms.... feel the lightness in your hands.... and be relaxed.... concentrate on the feelings from within your body and be relaxed... repeat it again .... observe the
tightness and slowly release them….. make them free and light... feel the lightness within.... and be still more relaxed keep the entire body loose and light. Be calm and relaxed... relax more and more, still.... further.

5. Now straighten your hands as tightly as you can make them stiff and press them by the side of your body ... still more... feel the tension within the muscles at the back of your hands ... at the back of your arms and forearms. Now again make them loose and light... completely free and falling on the side... keenly observe the soothing sensation within and be relaxed, repeat it again... good... feel the tension and make them loose and light.... observe the lightness within and be relaxed... still more calm.... and relaxed.... breathe freely and gently. Be relaxed keep the body completely still and light... shrink more into your bed... observe the growing lightness in your hands....

6. Now wrinkle your forehead... Push your eyebrows upwards.... as tightly as you can... feel the tension in your forehead... and slowly soothe it out and .... now observe the comfortable sensation in your forehead and be relaxed. Do it once again..... still more tightly ... feel the tension and slowly soothe it out.. Observe the lightness.... be calm and relaxed. Keep the entire body loose, light and free. Repeat it again.... still more... feel the tension and slowly release it. Observe the soothing sensation and be relaxed... be calm and relaxed, keep the entire body loose and light.

7. Now twitch your eye brows... as if you are frowning on someone... feel the tension between your eyebrows... and slowly soothe it out ... feel the lightness in your forehead and be relaxed be still more calm and relaxed.... do it once again tightly
and feel the tension and slowly release it.... be calm and relaxed...... still more relaxed.

8. Now close your eyes tightly... Observe the tension within your eyeballs and make them loose and light, but do not open them... Now observe the soothing sensation and do it once again ... feel the tension and slowly release it. Observe the difference.... be calm and relaxed. Still more relaxed.

9. Now press your tongue to the roof of your mouth in a flat manner.... do not coil your tongue and slowly make it as tightly as possible.... observe the tension in your tongue and slowly make it loose and light.... open your mouth slightly and feel the soothing sensation in your tongue.... and be relaxed. Repeat it again... feel the tension and slowly loosen it... observe the difference. Be calm and relaxed. Deeply relaxed.....

10. Now bite your teeth tightly by pressing your jaws.... as hard as you can. Feel the tension in your cheek muscles... and slowly make it loose and light. Feel the soothing sensation within and be relaxed. Practice it again.... good.... feel the tension and slowly release it. Again concentrate on the soothing lightness from your muscles and be relaxed Be still more relaxed....... still further relaxed.

11. Now press your lips against each other as hard as you can..... feel the tension within and around your lips slowly release them. Make them loose and free... Observe the lightness within and be relaxed... do it once again... goof, feel the tension and slowly release it. Keep the entire face loose light and free observe the soothing sensation spreading from your hands to face. Be deeply relaxed ... still more.... go deeper and deeper into relaxation.
12. Now bend your head forwards and let your chin touch the chest. Good turn your face to right as tightly as possible and observe the tension in your neck muscles and now turn it to your left. Again bring it to the middle. Touch the chin to the chest and slowly and keep it back in the old position. Make it loose and free. Completely light and loose. Observe the soothing sensation within and be relaxed. Keep the entire body loose and light. Be calm and be relaxed. Repeat it again. Good. Turn it to right to left. Observe the tension and bring it to the middle. Touch the chin to the chest. Slowly release it. Make it completely loose and free. Feel the tightness in your neck and be relaxed. Feel the relaxation in your hand, face and neck. Be calm and relaxed. Still more relaxed.

13. Now bend your head backwards and turn it to left and right. Good. Observe the tension and slowly release it. Feel the soothing sensation within and be relaxed. Do it again. Good. Now feel the lightness in your neck and face. Be relaxed. Be still more relaxed. Keep the entire body loose and light.

14. Now bend your shoulders upward in an arc like manner. As tightly as you can. Still more. Feel the tension in your muscles and slowly release them. Feel the difference. Be calm and relaxed. Keep the body loose and light. Repeat it again. Still more. Feel the tension and slowly release them. Observe the soothing sensation within and be relaxed. Be still more relaxed.

15. Now bend your shoulders backwards. Press the body against your bed as tightly as you can. Feel the tension and slowly release it. Make the body completely loose and free. Observe the difference. Concentrate on the growing lightness in your neck.
and shoulders... repeat it again ... feel the tension and release. Then.... observe the
difference ..... be relaxed..... still more relaxed....

16. Now move your shoulders in a circular manner... observe the tension within and
make them loose and light... feel the soothing sensation. Repeat it again... feel the
tightness and release them. Feel the soothing sensation and be relaxed. Be calm and
relaxed.

17. Now bend the upper part of your back upwards observe the tension..... and slowly
release it..... feel the lightness in your back muscles.... repeat it again.... good feel
the tension and slowly make it loose and free... observe the soothing sensation in
your shoulders and back.... be calm and relaxed.

18. Now bend the lower part of your backbone from your waist I an arc like manner, feel
the tension and slowly straighten it ... observe the difference .... feel the soothing
sensation within.... be calm and relaxed. Repeat it again. Observe the tension and
make it loose and free..... still more light.... feel the soothing sensation within and be
relaxed... be deeply relaxed.... concentrate on the growing tension of your trunk.
Be deeply relaxed.

19. Now take a deep breath and expand your chest... as best as you can.... feel the
tension in your chest and slowly release it. Observe the comfortable sensation
within.... breathe lightly and gently... now be relaxed.... do it once again.... good ....
feel the tension and slowly release it. Be calm and relaxed.... keep the entire body
loose and light.
20. Now swell your belly with air in the abdomen.... still more tightly feel the tension all over your abdomen muscles... slowly make it loose and free....breathe freely... observe the lightness in your abdomen.... and be relaxed.... repeat it again...good.... observe the tension and slowly release it. Be relaxed..... Still more relaxed.

21. Now shrink your belly in as tightly as possible and feel the tension slowly make it loose and light..... observe the difference.... do it again...good.... feel the tension and slowly release, repeat it. Be calm and relaxed...... Breathe lightly and gently. Be calm and relaxed.

22. Now tighten your abdomen muscles with a jerk... feel the tension and slowly relax it.... be still more relaxed, observe the soothing sensation within, repeat it again... good ... feel the tension slowly repeat it... feel.... the difference.... be calm and relaxed..... deeply relaxed... still more relaxed.

23. Now tighten your thigh muscles as tightly as possible... feel the tightness and slowly relax them.... feel the difference.... observe the soothing sensation from within... and be still more relaxed. Keep the entire body loose and light ... shrink more into your bed and ..... be relaxed.

24. Now bend your heels down and tighten your calf muscles... feel the tension within and slowly relax them.... make them loose and light. Be calm and relaxed..... still more relaxed.... repeat it again... observe the tightness.. Slowly repeat it. Be calm and relaxed, deeply relaxed.

25. Now bend your toes upwards, feel the tension in your legs and toes and slowly relax them.... make them completely loose and free .... Observe the soothing sensation and
be deeply relaxed... calm and relaxed... repeat it again... feel the tightness and slowly relax them. Feel the difference... be deeply relaxed... relax more and more.

26. Now bend the toes downwards as tightly as you can ... feel the tightness within your toes and feet... and slowly release it... observe the difference... repeat it again... feel the tightness and slowly repeat then observe the soothing sensation in your toes and legs. Be calm and relaxed... deeply relaxed... still more relaxed.

27. Now slowly draw in a deep breath and slowly release it. Keep the entire body loose and light relax freely.... concentrate on the growing lightness in your hands, face, neck, shoulders, chest, abdomens, back, thighs and legs.... shrink more into your bed... be deeply relaxed... relax more and more... further and further... deeper and deeper... go on relaxing... enjoy your relaxation more and more for some time... be relaxed.... deeply relaxed..... relax.......relax..........relax................

Termination (After 10-15 minutes of relaxation)... Now you are calm, comfortable and relaxed. Count from one to four... to one. Now start... one.... good... (After completion of the counts, i.e., ...four and four to one). Slowly open your eyes. You are completely relaxed, fresh and comfortable.”

The entire progressive muscle relaxation sequence was carried out for a duration of 30 minutes.

Counseling

Hospital work often requires coping with some of the most stressful situations found in any workplace. Hospital workers must deal with life-threatening injuries and illnesses complicated by overwork, understaffing, tight schedules, paperwork, intricate or
malfunctioning equipment, complex hierarchies of authority and skills, dependent and demanding patients, and patient deaths, all of which contribute to stress.

Brief half an hour sessions in groups of five were given to managers using an educative approach on dealing with stress. The general content of the counseling session consisted of the following general themes.

*Understanding organizational policies:* A clear understanding of the organizations policy helps to develop awareness among the managers. They were made aware by self-reports and group discussions, what is expected out of them and what they actually deliver or can deliver.

*Organizing personal space:* They were given sessions on the advantages of organizing workspaces in a way as to be enjoyable and allow efficient use of time. This was to enable managers to work in an uncluttered and stress free environment.

*Development of a healthy lifestyle:* Though in the healthcare industry, they were given classes on the benefits of following a healthy lifestyle and its advantages in contrast to leading a high pressured lifestyle; managers resort to unhealthy as well as maladaptive practices as a reaction to dealing with stress. Managers were made aware of the consequences of such behavior and the advantages of accepting a healthy regimen such as maintaining a normal weight, practice of healthy eating behaviors, regular exercise and practicing relaxation, giving up smoking and alcohol consumption which in the long run will enable them to deal with stress.

*Establishing and maintaining appropriate social support:* It is helpful for people who feel under stress to have discussions and exchange points of view with colleagues. Even
if they cannot get help from them, any advice or encouragement is considered helpful. The advantages of requesting direct support, developing and maintaining friendships, and the importance of communication, were discussed during the counseling sessions.

*Observation of stress in colleagues and subordinates and involvement in solving:* The managers were enlightened on the importance of stress awareness. Stress awareness is the first condition for eliminating it. Once the signs of stress are understood, those with problems should be persuaded to take some counter measures. This should be done tactfully, during individual discussions in a relaxed pleasant atmosphere, in the company of colleagues with which the individual was in close relationship.

*Control of Emotional reactions:* Undesirable as well as inconvenient events are unavoidable in an individual’s work life. An individual’s ability to control his emotions and problem focused way of dealing with it represents an asset in fighting stress. The managers were educated on dealing with inconvenient situations. Problems and frustrations should not be ignored and on the contrary they were encouraged to act so as to remove the inconvenient situation with objectivity, without leaving place for anger and fury, and without becoming intolerant towards others. Positive thinking and being calm can be very helpful in difficult, stressful situations and have a favorable effect on colleagues/subordinates and working climate.

*Goal Setting and Time Management:* The benefits of setting realistic, achievable and time bound goals help managers deal with stress. Unrealistic and unachievable goals are often a source of stress. The advantages of setting and reviewing goals, ways of achieving goals, the time allotted to each task, setting priorities, taking breaks between activities, reviewing priorities and progress, analyzing standards and finally remembering that after
each activity is performed to reward themselves. The benefits of reinforcement were discussed during the counseling sessions.

*Leisure time activities:* The advantages of leisure and personal time were discussed with the managers during the counseling session. The work/family conflict was a major source of stress for many managers. Relaxation by means of pleasant outdoor activities was also introduced to the managers.

*Assertiveness:* A technique frequently mentioned as an effective stress reduction technique is learning to say "No". The managers were taught on the advantages of being assertive and not aggressive and passive. Too often people become stressed due to their inability to refuse doing something because of the embarrassment of telling others that they cannot fulfill their assigned tasks and duties.

**Phase III: Posttest**

Soon after the completion of the intervention for about 12 week’s period, data was collected on psychological criteria factors. For this purpose, once again, the concerned respondents were requested to furnish data on the same parameters such as occupational stress, burnout and well-being using the same questionnaire/inventory as in phase I.

**Phase IV: Follow Up**

After withdrawal of intervention a month’s time was allowed to elapse before collecting data. This was intended to assess the levels to which the psychological factors under study were sustained without any intentional support. The concerned respondents were requested to furnish data on the same parameters such as occupational stress, burnout and well-being using the same questionnaire/inventory as in the pretest and post test phases.
Section VI: Statistical Techniques

As it was intended to examine the effectiveness of the intervention on the various factors under investigation over three phases; pre intervention, post intervention and one month delayed follow up, and further explore category differences among the four designated groups, this study followed a 4 X 3 Mixed Factorial design. In this study four categories of professional managers were tested at three points of time. The within-subjects factor was the three phases of testing of the variables under investigation or time and the between-subjects factor was the category of professional managers. One of the most common designs used in psychology experiments is a two factor ANOVA, where one factor is varied between subjects and the other within subjects. The analysis of this type of experiment is a combination of the analysis of two-way between subjects ANOVA and the within-subject analysis.

The interaction between the within-subjects and the between-subjects factor was examined first. A separate one-way ANOVA analyses for each level of one factor, was carried out in case of a significant interaction being found. In addition to univariate test results, the results of the multivariate tests were reported whenever the sphericity assumption was violated for the within-subjects factor. Additionally the $F$ values were reported after correcting the degrees of freedom using Greenhouse-Geisser estimates of sphericity.

Duncan’s post-hoc multiple range tests resulting in homogenous subsets was used for between-subjects comparison. Moreover, for the within-subjects factor the Bonferroni post hoc test was used with Estimated Marginal Means. The results of the mixed
ANOVA were further illustrated using line graphs to present a clear picture of the levels of the variable for different categories at different points of time.

The demographic profile of the sample was constructed and explained. The subjects were matched on gender and departments where they work.