Methodology
CHAPTER III
METHODOLOGY

This chapter deals with description of methodology followed in the study and is discussed under the following headings, research approach, research design, statement of the problem, aims of the study, objectives of the study, hypotheses, setting, population sample and sampling technique, selection and development of the instruments, pilot studies, procedure of data collection and data analysis plan.

3.1. GENESIS OF RESEARCH:

Researcher developed interest to study the concept of stress and its relationship with causation of various illnesses. He himself is a nurse educator in psychiatric nursing accompanying the students to clinical areas to teach bedside nursing care of psychiatric patients, he found many of the patient’s history had the precipitating factors associated with onset of illness. Then onwards, he was keen on studying the psychosomatic disorder. But he found only the patient’s with somatoform disorders were treated in psychiatric set up and not the patients with psycho-physiological disorders.

To learn about psycho-physiological disorders, researcher reviewed many scientific articles in medical, psychological and nursing journals. To his surprise, he found a few studies with limited number of sample sized and the
findings cannot be generalized. The major non-communicable disease like MI, diabetes and cancer etc were significantly associated with stress, even then nursing studies in the area of stress and MI were inadequate. Considering the magnitude of the problem and the paucity of the work, researcher decided to assess the level of stress and identify the coping styles that these MI patients use. On his search for tool, he found standardized tools to assess stress of MI patients in a holistic manner were none. Therefore he determined to develop socio-demographic and clinical profile with all possible sources of stressors to get comprehensive data. Similarly he chose to assess psychosocial variables causing stress like death anxiety, family burden, perceived social support appraisal and quality of life. The coping behaviour rating scale was chosen to study their stress management with a view to build evidence base to provide bio-psycho-social-spiritual need based nursing care to MI patients.

3.2. RESEARCH APPROACH:

The selection of research approach is the basic procedure for the research of enquiry. The research approach helps the researcher to determine what data to collect and how to analyze it. It also suggests possible conclusions to be drawn for the data. In view of the nature of the problem selected for the present study “to assess level of stress and coping behaviour seen among patients with myocardial infarction at Sri Jayadeva Institute of Cardiology, Bangalore, India” and for the objectives to be accomplished a descriptive research and exploratory survey was considered appropriate for the present
study because exploratory surveys are typically conducted in early stages of investigation of a problem (Polit and Hungler, 2002).

A descriptive survey is considered to be the most suitable for finding out the opinions of selected population and it provides factual information about the existing situation.”Surveys almost invariably serve a descriptive function” (Polit and Hungler, 2002).

3.3. RESEARCH DESIGN:

The selection of design depends upon the purpose of the study, research approach and variables to be studied. A research design for the present study was selected using descriptive correlational design which belongs to non-experimental research design to find out the level of stress and coping behaviour seen among myocardial infarction patients.

STATEMENT OF THE PROBLEM;

A Study to assess the level of Stress and Coping Behavior seen Among Patients with Myocardial Infarction at Sri Jayadeva Institute of Cardiology, Bangalore, India.
AIMS OF THE STUDY:

1. To identify the nature and source of stress seen among the patient with Myocardial Infarction patient.
2. To identify the pattern of coping behaviour seen among the Myocardial Infarction patient.

OBJECTIVES OF THE STUDY:

1. To describe the socio-demographic characteristics of study subjects diagnosed with Myocardial Infarction.
2. To assess the level of stress among the subjects.
3. To identify the level of coping behaviour seen among subjects.
4. To identify the relationship between the stress and coping.
5. To find out the association between specific socio-demographic characteristics and level of stress and coping behaviour.

MAJOR ASSUMPTIONS:

1. Patients with Myocardial Infarction face different levels of Stress.
2. Coping behaviour of Myocardial Infarction patients differ according to their level of stress.
3. Higher the perceived social support, better the coping behaviour, lesser will be the level of death anxiety, lesser will be the level of family burden. In such situation MI patient may lead to higher quality of life.
HYPOTHESES:

- $H_1$ there will be statistically significant association between the level of stress and selected Socio-demographic variables such as age, sex, and domicile.

- $H_2$ there will be statistically significant association between the level of coping and selected Socio demographic variables such as age, sex, and domicile.

- $H_3$ there will be statistically significant association between the level of stress and coping behaviour.

3.4. POPULATION:

The population of the study consisted of all patients who were clinically diagnosed to have myocardial infarction.

3.5. SAMPLE:

All patients diagnosed with MI receiving diagnostic and treatment facilities at Sri Jayadeva Institute of Cardiology, Bangalore and also met the inclusion criteria during the data collection period were recruited to participate in the study.

3.6. SAMPLE SIZE: 300
3.7. SAMPLING CRITERIA:

INCLUSION CRITERIA:

- Subjects aged between 18-75 years.
- Subjects diagnosed to have myocardial infarction.
- Subjects who were hospitalized in Sri Jayadeva Institute of Cardiology in Bangalore.

EXCLUSION CRITERIA:

- Patients who have pre existing psychiatric illnesses like major depression, major anxiety etc.,
- Patients with known Coronary Artery Disease with or without old myocardial infarction.
- Those who had chronic terminal and incurable illnesses like Cancer, end stage renal failure, old cerebrovascular accident etc.,

3.8. SAMPLING TECHNIQUE:

Simple random sampling method was used. The name list of MI patients who were meeting the inclusion criteria of the study was made every day. Their name-lots were prepared. From the lots, two lots were picked up randomly using lottery method. Since every day randomization was done in selecting the subjects for study, the researcher felt simple randomization was comfortable. Those patients name appeared in the lots were contacted to collect the data. This procedure was repeated till the required sample size was reached.
3.9. SETTING OF THE STUDY:

Study was conducted at Sri Jayadeva Institute of Cardiology in Bangalore. It is a government owned autonomous institute and is offering super specialty treatment to all cardiac patients. It has got 540 bed strength with 4 cathlabs, 4 OT, and non invasive labs and ICU facilities. Presently on an average 400-500 patients are visiting this hospital every day. Annually 1,46,018 are getting benefited as out patients and 15,135 patients getting treated in inpatient units in this hospital and the number of MI cases registered in the year 2006 were 1566. The cardiology team consisted of cardiologists, staff nurses, nursing aids, X-ray technician, dietician, health assistants, cath lab technicians, shift consultants and senior registrar. The details of the number of patients who had undergone the following procedures since January 2006 were Valve replacement - 321 patients, echo-65940 patients, CAGB - 9081, TMT - 11905, coronary angiogram - 5746, balloon valvoplasty –1005, open heart surgery-1297, angioplasties-1359 and permanent pacemaker-505. Nurses work on three shifts and provide care round the clock.

3.10. DEVELOPMENT AND DESCRIPTION OF RESEARCH TOOLS:

In dealing with the real life problems of myocardial infarction, the secondary data available from the registry alone were felt grossly inadequate. Primary data were therefore elicited from the respondents themselves relating
to their real life situations and experiences, as the same was necessary to fulfil
the needs of the study.

In choosing the technique to be utilized for the purpose of collecting
primary data, the researcher had to take into account considerations such as,
who are to be the respondents, the value of investigation, objective and scope
of the inquiry also the available time and other sources.

Considering the above-mentioned aspects, appropriate tools were
devised and selected to elicit the required information effectively. For this
purpose, a thorough analysis of literature was done. The construction of
schedules and questionnaire were based on scales relevant to the objectives and
variables in the study. The tools that were used detailed below (APPENDIX-IV
and APPENDIX-V).

**SOCIO DEMOGRAPHIC SCHEDULE**

This tool elicited the socio demographic details of the sample. This was
developed by the researcher himself in accordance with the needs of the present
study. For the purpose of collecting data and interview schedule was preferred.
For a population of this nature, establishment of sufficient rapport with
respondent was felt very pertinent. This could be achieved, only by
interviewing them. Hence, preparation of a schedule to guide the interview
which ensures uniformity and depth of the elicited information was necessary.
The first part explored the personal profile of the respondent and elicited information of the respondent on General Information (age, sex, marital status, education, occupation, income, place of residence, number of earning members, having debts/loans, religion and caste.) contained 12 questions from V1 to V12.

The next part consisted of items pertaining to Clinical profile contained 71 questions from V13 to V84 (history of myocardial infarction in the family, perceived stage of disease the various methods for diagnosis, various treatments, and systems of medicine adopted for treatment, the primary and secondary effect of myocardial infarction and Use of any prostheses etc.)

The interview schedule also contained items to elicit information on the impact of myocardial infarction on the Patient and Family contained 21 questions from V85 to V106; Patient and Spouse contained 4 questions from V108 to V111. Patient and Society contained 35 questions from V125 to V160 and Patient and Spirituality contained 16 questions from V161 to V176. The final version of the schedule is included in the APPENDIX –IV (b) and APPENDIX- V (b).

It was assumed that the stress of MI patients was from various sources therefore it was decided to assess the stress from four psychological and social
variables. They were Death Anxiety, Family Burden, Perceived Social Support Appraisal and Quality of life. To assess coping, coping behaviour scale was selected.

DEATH ANXIETY SCALE

Formerly death anxiety was assessed based on a number of interview procedures with lengthy questions and also by the administration of TAT cards. It was Donald I Templer (in 1970) who developed the Death Anxiety scale (DAS) by a procedure that was somewhat different from that of the Fear of Death Scale (FODS) by Boyar (1964). The DAS by a procedure that was somewhat different from that of the Fear of Death Scale (FODS) by Boyar (1964). The DAS items reflect a wider range of life experience.

Forty items were derived on a rational basis. Twenty three of these were keyed “true” and seventeen were keyed: false”. Rating was done for all the forty items based on (i) Irrelevance of death anxiety (ii) slightly associated with death anxiety (iii) moderately associated with death anxiety (iv) considerably associated with death anxiety and (v) very greatly associated with death anxiety.

Point biserial correlations were then computed and the 15 items with significant items – total score correlations constituted the final DAS. Nine of
the 15 items were keyed “true” and the remaining six were keyed “false”. Internal consistency and test-retest reliability were determined.

Reliability and Validity:

The validity of the DAS was investigated by two procedures:

a. In an effort to establish the constructed validity of the DAS, test was done on psychiatric patients in a state mental hospital also using control groups. Presumable high death anxiety psychiatric patients were found to have significantly high Death Anxiety Scale scores than control patients.

b. Death Anxiety Scale scores correlated significantly with boyars FODS scale, another death anxiety questionnaire and with a sequential word association task DAS Correlations with MMPI variable were also obtained.

The test re-test reliability of the death anxiety scale was 0.7497 and validity was 0.8658

Scoring:

A weightage of +1 was given to each correct item and the incorrect item was scored as 0. The total score was computed which could range from 0 to a maximum of 15. Respondents with higher DAS scores were said to have increased death anxiety.

The final version of Death Anxiety Scale was placed in APPENDEIX-IV (c) and APPENDIX-V (c).
FAMILY BURDEN INTERVIEW SCHEDULE

Earlier studies by workers were on the assessment of social burden on the discharge of chronic patients to the community. Later studies pointed out that the stress caused to the families by the patient was an important factor in determining the patient’s acceptance by the family. This aspect was assessed in greater detail. It was the work of Grad and Sainsburg (1963) that made headway in assessing the burden felt by patient’s families, on a three-point scale. The scale was tested for reliability and the result was that there was 75 percent agreement among three interviewers.

No such work had been reported in an Indian setting. The economic and cultural conditions in India being vastly different from those of the Western World, the areas of family burden and the pattern of accepting or rejecting patients may be entirely different. Keeping this in mind, Shaila Pai and R.L. Kapur developed a standardized method of assessing the burden on the family, which could be applied to Indian culture.

As a first step in the construction of the interview schedule, free unstructured interview was conducted with one relative of each of 40 patients at an out-patient clinic. The focus was on various areas of burden the families might have experienced due to the patients illness. Their responses were to be objective and concrete. The content was analyzed in terms of the various categories of burden experienced. Later, another new twenty four interviews
which were recorded were distributed among six professionals in psychiatric field. They were grouped into general categories of the various items of burdens. On comparing the categorization thus collected with that prepared by the investigator earlier, it was found to be broadly similar.

The semi-structured interview schedule can be used in comparing the effect on the family of different types of illness. The schedule has given consistent results, and has also been found to have a high correlation with the social functioning of the patients. (Shaila Pai and R.L. Kapur, 1981)

The 24 possible items thus picked were arranged in six different categories.

The categories of burden are:

1. Financial
2. Effect on Family routine
3. Effect on Family leisure
4. Effect on Family Interaction
5. Effect on physical health of other family members
6. Effect on mental health of other family members

Each item under the different categories was then converted into a question for the definitive interview schedule.

**Scoring**

The rating for each general category as well as for each individual item is done on a three point scale. Each item is to be recorded as: severe burden,
moderate burden or no burden. The severe burden response is given a
weightage of 2, moderate burden response is scored as 1 and no burden
response is counted as zero. The total score in the test is the score of all above
three. Higher the score, higher the severity of burden

\[
\text{Total of severe burden response} = \times 2 \\
\text{Total of moderate burden response} = \times 1 \\
\text{Total of no burden response} = \times 0
\]

\[
\text{Total score} = \text{-------------------}
\]

**Reliability**

The reliability of the family burden interview schedule was examined by
the following method. One relative of each of 20 patients was interviewed by
three raters, who sat together with one of them putting the questions to the
relative. Each rater made individual assessment of the burden felt by the
relative and made independent scoring. The ratings were then compared and
the difference were examined for statistical significance by determining a
reliability co-efficient, the method being based on two way analysis of variance
(Winex, 1962). The reliability score was above 90 percent for 20 items, and between 87 and 89 percent for the other four, which is extremely high.

*The test re-test reliability of the family burden interview schedule was 0.8727 and validity was 0.9342*

**Validity**

To test the validity of the instrument, the subjective burden as reported by each relative was scored on a similar three – point scale. It was considered that of the overall objective burden assessed by the raters was highly correlated with the subjective burden as reported by the relative; it would be an indirect, though not an absolute, method of measuring the instruments’ validity. The correlation coefficient between the mean total scores on each item as assessed by the professional raters and the relatives was [0.72 (df=1)] sufficiently high. The final version of the schedule is included in APPENDIX-IV(d) and APPENDIX- V(d).

**PERCEIVED SOCIAL SUPPORT APPRAISAL.**

Social support is a relevant aspect in the life of the myocardial infarction patient. Hence it was felt necessary to assess the social support system as perceived by the respondents.

The social support appraisal prepared by Alan Vaux with Philips, Holy, Thomson. Williams and Stewart in the year 1993 was taken for the assessment. This instrument’ 23 items elicited the support perceived from three sources,
namely family, friends and others. The items were based explicitly on cobbs (1976) definition of social support and was designed to get the individuals belief that he/she is loved, esteemed and involved with family, friends and others. The items were found to be very simple and easily understandable to individuals of all backgrounds.

Few other scales which were analysed for assessing social support included those developed by Taidy (1985), Hinderson et al (1980) and Turner et al (1983). Taidy’s measure of social support rather than subjective appraisals, Eventhough Hendersons’ (1980) instrument aims to measure the availability and adequacy of attachment and social integration, it was discarded since the items were overlapping and also technical to be understood by the Indians. Turner’s instrument (1983) seemed to be too general. It was simple to assess the level of individuals’ feeling of being loved, esteemed and involved. All these scales were not found appropriate for this study.

Scoring

The 23 items of tool are measured on a 4 point scale – strongly agree. Agree, disagree and strongly disagree. Those items with positive responses were scored as 4,3,2,1. a score of 1,2,3,4 is assigned to the items eliciting negative responses.
Reliability and Validity:

The test re-test reliability for Perceived Social Support appraisal was 0.8285 and validity was 0.9102

The final version of the Perceived Social Support Appraisal is included in APPENDIX-IV(e) and APPENDIX- V(e).

QUALITY OF LIFE

A generally accepted definition of quality of life is not available. A set of questions for Quality of Life is designed by S Kaasa, A. Mastekassa and s. Naess. They defined quality of life in terms of the patient’s subjective evaluation of his/her life and situation.

The psycho social well being questionnaire is composed of a 10 Question scale and 2 global quality of life questions. The selection of general population. Five positive and five negative questions are used to correct for the acquiescence response set, which has been joined to be a problem in some quality of life studies, Acquiescence is the tendency of the respondent to agree with any question regardless of the content.

Scoring

The responses to each item were scored on a 5 point scale ranging from ‘not at all’ to ‘all the time’ give values from 1 to 5. the global questions were scored on a 7 point scale giving values from 1 to 7. a low score on the responses represented a high quality of life.
Reliability and Validity:

The test retest reliability for quality of life was 0.5680 and validity was 0.7537. The final version of the Quality of Life is included in APPENDIX-IV(f) and APPENDIX- V(f).

COPING BEHAVIOUR SCALE

This was developed within the transactional perspective by Rao (1982) for use with an urban India population. The transactional model used referred to the individual’s “cognitive and behavioural efforts to manage the internal and external demands of the person environment transaction that is resources” (Folkman, Lazarus, Gene and Dilongis, 1986) coping behaviours related for the tool were required to serve one of the three functions (a) to change a stressful situation, (b) to control the meaning of the situation and (c) to control emotional distress in relation to stress. Therefore problem focused, emotion focused and appraisal focused coping behaviours were included in this instrument.

The coping checklist comprised 70 items and responses were scored in a binary fashion. Yes/No indicative of presence of positively responded items were summed upto represent the size of the coping repertoire.

The procedure assessed the individuals coping patterns of resources in terms of the tendency for use in certain stressful situations (Rao,1986). The tool was kept open ended allowing the individual to report additional coping behaviours.
The modified version of the coping checklist was used first by Vermin N. (1989) in her unpublished doctoral thesis titles “life stress, social support and coping in individual with psychological distress”. The tool was modified as there were certain items not relevant to the population.

These items were deleted and three commonly noted responses to stress were added. The final version of the tool contained 56 items.

The response categories were modified to include frequency of coping behaviours rated on a five points scale. The scale ranged from never to always. The response categories were as follows:

1. Never – if the method of coping was never used at all.
2. Seldom – if used 25% of the time.
3. Sometimes – if used 50% of the time.
4. Often – If used 75% of the time.
5. Always – if used 100% of the time.

The categories were summed at to arrive at a total coping repertoire of the subject.

The score were interpreted as higher the score, higher the use of coping behaviour.

Reliability and Validity:

The test re-test reliability for coping check list was 0.5974 and validity was 0.7729.
The final version of the Coping Behaviour Scale is included in APPENDIX-IV(g) and APPENDIX- V(g).

3.11. TRANSLATION OF THE TOOL

The developed tools were translated into Kannada using pragmatic translative method by a professionally qualified translator (from English to Kannada). Translation accuracy was done. Discrepancies were identified and the translations were redone to modify a few statements in the instruments.

3.12. PILOT STUDY AND REVISION

The pilot study was conducted on 90 subjects using Simple Random Sampling technique was used. Data was collected at Trinity Heart Foundation, Bangalore. Feasibility of tool administration and method of data collection were assessed. It was found that the subjects took the interviews were at ease, items in the tools were clear, simple to understand & follow. The time taken was minimum 30 mins to maximum 60 mins per session. The pilot study experience helped the investigator to bring out modifications in the main study. The suggestions of research advisory board based on pilot study analysis were as follows:

- Splitting up of hypothesis for analysis purpose
- Establish reliability and validity of the Kannada tool by test retest method on 90 subjects.
The findings of pilot study with regard to level of death anxiety of the study subjects. It was found that majority of the subjects (53.3%) had moderate level of anxiety requiring therapeutic intervention.

With regard to level of family burden of the study subjects, it was found that majority of the subjects (68.9%) had moderate burden.

Considering perceived social support of the study subjects, it was found that majority of the subjects (51.1%) perceived that they had good social support.

With regard to Quality Of Life of the study subjects, it was found that majority of the subjects (88.9%) had satisfactory Quality Of Life.

With regard to level of coping behavior of the study subjects, it was found that majority of the subjects (85.6%) had moderately effective coping.

3.13. ETHICAL ISSUES:

Before conducting the study ethical clearance and permission were obtained from Sri Jayadeva institute of cardiology in Bangalore [Appendix-I(a) to Appendix-I(d)], to contact patients for the data collection. Before starting the data collection procedure, patients were explained about the types of information will be collected from them and the purpose of the study. They were told about the information will be kept confidential. Informed written consent [Appendix-IV(a) and Appendix-V(a)] was obtained from the subjects. Subjects were given the freedom to withdraw from the study at any stage. They were interviewed on one to one basis by providing privacy.
3.14. DATA COLLECTION PROCEDURE:

Data was collected using structured interview schedule which consisted of socio demographic profile, death anxiety scale, family burden interview schedule, Perceived social support appraisal scale, quality of life and coping behaviour scale from January 25\textsuperscript{th} 2007 to October 31\textsuperscript{st} 2007. Interview method was used data collection time schedule for each subject was separately made to suit their convenience, date, time and the venue, Data collection schedule thus was prepared based on the consensus of both investigator and study subjects. In one session only two tools were used to collect data. Minimum of 30 minutes and maximum of 60 minutes was taken for a single session. Three sessions were conducted for each patient. Both physical and psychological comfort of study subjects was given the priority. The details of data collection schedule as follows.

Table 3.1: Schedule for Data Collection Procedure

<table>
<thead>
<tr>
<th>1\textsuperscript{st} session (morning)</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Items</td>
<td></td>
</tr>
<tr>
<td>To develop rapport with the patient brief explanation</td>
<td>15 min</td>
</tr>
<tr>
<td>socio- demographic profile</td>
<td>45 min</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2\textsuperscript{nd} session (After lunch and light relaxation)</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived social support appraisal scale</td>
<td>10 min</td>
</tr>
<tr>
<td>Coping check list</td>
<td>20 min</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3\textsuperscript{rd} session (After an hour gap)</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family burden interview schedule</td>
<td>15 min</td>
</tr>
<tr>
<td>Quality of life scale</td>
<td>5 min</td>
</tr>
<tr>
<td>Death anxiety scale</td>
<td>10 min</td>
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</table>
3.15. INFORMATION BOOKLET ON STRESS MANAGEMENT FOR PATIENTS WITH MYOCARDIAL INFARCTION (APPENDIX-VI and APPENDIX-VII)

Information booklet was developed to help MI patients to cope up with heart attack by managing stress. Booklet consisted of Introduction to heart (Chapter I), Concept about Heart Attack (Chapter II), Diagnosis of Heart Attack (Chapter III), Treatment of Heart Attack (Chapter IV) and Stress Management (Chapter V) to prevent heart attack and relapse. The content validity of the booklet was obtained from the experts who had validated the tools used in this study.

3.16. METHOD OF DATA ANALYSIS

On completion of the data collection, the data collected were edited coded and tabulated. The statistical treatment of data was achieved through computer applications, using the SPSS (statistical package for social sciences). Data analysis comprised appropriate statistical techniques including percentage analysis ‘t’ test, multiple regression and correlation.

Paired t-test was employed for comparison of means of psychosocial variables between and males and females.

Multiple regression analysis is a method used to study the relationship of a single quantitative dependent variable with several variables. The multiple
regression analysis is used for testing a variety of hypothesis concerning the nature and strength of effects of the several explanatory variables on quantitative dependent variable. Regression analysis has been found to be very useful in the evaluation of effects of variety of variables, which cannot be subjected to experimental controls but which are nevertheless of primary importance. Hence multiple regression analysis between psychosocial variable and demographic data was conducted.