Research Methodology
Research describes the quest for knowledge and is a process by which intensive, purposeful and multi-dimensional insights into specific problems can be sought. The Webster's International Dictionary defines research as a 'careful critical inquiry or examination in seeking facts or principles, diligent investigation in order to ascertain something'.

Social research is a systematic method of exploring, analyzing and conceptualizing social life in order to 'extend, correct or verify knowledge, whether that knowledge aims in the construction of a theory or in the practice of an art (Manheim, 1977). One of the functions of social research is to develop and evaluate practices, concepts, and theories. Applied social research is used to improve the quality of social life of an individual or group. It can be further used in seeking improvement of or enhancing the quality of life by developing measures of quality of life (Seltiz, Wrightsman and Cook, 1976). The purpose of research is discovering answers to questions through the application of scientific procedure, that is, by using research methods.

Methodological precision is an essential element of any research study. During the last two decades, methodology of social research has come to occupy an increasingly important place. It not only ensures systematization of research, but also eliminates various kinds of biases and errors. It is of paramount importance in any scientific inquiry, as the validity and reliability of the facts primarily depend upon the system of investigation. The task of the researcher proceeds from the formulation of the problem to other pertinent issues; such as, identifying the research design, choosing the tools and techniques, defining the variables, constructing indices and analyzing the data with the help of statistical measures.

Methodology comprises the principles and rules underlying the conduct of scientific inquiry. The domain of methodology includes the entire procedure of scientific research comprising the techniques of data collection, methods of
analysis and interpretation of data collected and the process of abstraction for transforming reality into theory.

The detailed plan of how research is conducted is known as research design. A research design adopted in the pursuit of research and enhancement of knowledge is essential to arrive at scientific, unbiased and logical conclusions. A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure (Seltiz, Wrightsman and Cook, 1976). It is the logical and systematic planning and directing of a piece of research.

The design results from translating a general scientific model into varied research procedures. A research design guides the investigator in the process of collecting, analyzing and interpreting observations. It is a logical model of proof that allows the researcher to draw inferences concerning causal relations among the variables under investigation. The research design also defines the domain of generalizations, that is, whether the obtained interpretations can be generalized to a larger population or to different situations (Nachmias and Nachmias, 1981).

Research design represents a compromise dictated by the many practical considerations that go into social research. A research design is not a highly specific plan to be followed without deviations, but rather a series of guideposts to keep one headed in the right direction (Suchman, 1954).

In other words, a study design is tentative. As the study progresses, new aspects, new conditions, and new connecting links in the data come to light, and it is necessary to change the plan as circumstances demand. The most meaningful and revealing studies are those that are conceived from a definite point of view, but the views are modified as necessary in the process of study (Young, 1982).
It is essential for any study to be conducted in a systematic manner. Therefore, a research design has to be chosen which is best suited to the study in obtaining insights and producing reliable results.

**Methodological Approach**

The present study is primarily an exploratory one. An exploratory research design is used to gain familiarity with a phenomenon or to achieve new insights into it, often in order to formulate a more precise research problem or to develop hypotheses. These studies are important both for the qualitative information they unravel and for the likely contributions to policy formation.

The major emphasis in such studies is on discovery of new ideas and insights. Therefore, the design must be flexible enough to permit the consideration of many different aspects of the phenomenon. Exploratory studies provide the most general information about a research problem. They usually supply the researcher with his/her first exposure to the existing information in his area of interest and provide the basis for later, more rigorous studies. Exploratory studies include literature review, consultation with the experts and case exploration. These studies are important both for the information they contain and for their contribution to policy making and planning for the future (Seltiz, Wrightsman and Cook, 1976).

**The Unit of Study**

The sample of this study comprised of 100 married, working men under the age of 58 who had a confirmed Acute Myocardial Infarction (AMI) and were admitted in the Emergency Medical OPD of the PGIMER, Chandigarh. The spouses of all the respondents have also been interviewed. Cardiac damage has been rated by a medical doctor [posted in the Emergency] according to the following parameters: Chest pain, breathlessness, Killip class [I, II, III or IV], site of infarct, arrhythmias, bradyarrythmia.
The inclusion criteria comprised of the following:

a) Gainfully employed, Married Men leading an active married life; in the age group of 30 – 58 years who were admitted in the Emergency Medical Ward (only those who were stable enough to be shifted to the ward from the OPD) of the Post Graduate Institute of Medical Education and Research, Chandigarh (PGIMER) with a confirmed diagnosis of first AMI or heart attack have been included in the study.

b) Spouses of the respondents.

Respondents and their wives were briefed in Hindi/English about the study and a written consent at the time of first interview was taken from those who agreed to participate.

However, respondents suffering from Associated chronic medical illness like Cancer; Lymphoreticular Malignancies; Debilitating Neurological disorders; Chronic Liver disease; Chronic Renal Failure; Chronic Pulmonary disease; Complicated Diabetes, especially those who had evidence of neuropathy and Long-standing Psychiatric illness prior to the onset of myocardial infarction have not been included in the study.

Sampling Technique

The present study has been undertaken at the Post Graduate Institute of Medical Education and Research [PGIMER], Chandigarh. This Institute offers latest diagnostic and therapeutic services besides training postgraduate students from India and abroad in various medical specialties and in conducting high-level research on various aspects of human health. It caters to the needs of patients not only from Chandigarh, but also from neighboring States like Haryana, Punjab, Himachal, Jammu & Kashmir, Rajasthan, and Uttar Pradesh.
A sample is defined as a part of the population, which is observed in order to make inferences about the whole population (Manheim, 1977). A sample is a miniature picture or a cross section of the entire group or aggregate from which the sample is taken. The entire group from which the sample is taken is called a ‘universe’ (Young, 1982). In other words, when the data is partial and is used to characterize the whole, the subset is called a ‘sample’ and the whole is called ‘universe’. The process of drawing partial data from the larger universe is called sampling (Nachmias and Nachmias, 1981).

From among the various sampling techniques available for conducting research the purposive sampling technique, which is a form of non-probability sampling, has been used for the present study. Purposive sampling is also known as judgment or expert choice sampling. The basic assumption of purposive sampling is that, with a good judgment and an appropriate strategy, one can handpick the cases to be included and develop a sample that relates to the subject of study (Manheim, 1977). Only those units, which represent the whole, are selected. The choice of selection is supreme and nothing is left to chance. The aim of purposive sampling is to gain as representative a sample of the universe as possible. The purposive sample for the present study possesses qualities that are representative of a cross-section of the entire group or aggregate.

**Data Collection**

The researcher made her sincere attempts to collect reliable and valid information from the respondents. Utmost care has been taken to maintain confidentiality. The respondents and their spouses have been provided with as private an environment as possible. A considerable amount of time has been given to each one of them in order to establish a rapport and put them at ease. Often, the interview stretched over days, since it is a sensitive and a highly personalized issue.
Qualitative and quantitative data, which is reliable and valid, needs to be collected for research. For this purpose, various instruments or devices may be used. These instruments thus are called tools of research. Tools are aids of data collection. Research tools undoubtedly facilitate research by making the research process easier, faster and more accurate and also more productive. A variety of tools have been developed and made available over time. Tools, which are used effect the course of research being carried out (Kaplan, 1964; Kuhn, 1962 as cited by Manheim).

For the present study, interviewing technique was used to gather information from the respondents and their wives with the help of an interview schedule. An interview schedule consists of a set of questions or statements, which are asked and filled in by the researcher in a face-to-face situation (Goode and Hatt, 1952). Face to face, in depth interviews have been conducted to collect primary data. Intensive observations supplemented these long in-depth interview sessions. To cross check the information, the researcher used the method of triangulation, to obtain accurate information.

In a structured interview schedule, the questions, the words used and their sequence, are fixed and are identical for every respondent. This is done to make sure that when variations appear between responses, they can be attributed to the actual differences between the respondents and not to variations in the interview (Nachmias and Nachmias, 1981). Schedules facilitate the work of tabulation and analysis.

Case history method has also been used to obtain an intensive insight into the patterns of the respondents' behavioural changes and rehabilitation status. The case histories have been recorded over a period of time. This provided qualitative information to substantiate the quantified data.
The data was collected in three stages,
- In hospital, within 5 – 15 days of the myocardial infarction [T1],
- Three months after discharge from the hospital [T2] and
- One year after discharge from the hospital [T3].

For the present study, two sets of interview schedules were prepared – one for the respondent and the other one for his spouse. The set of schedules was prepared keeping in mind, the main aims and objectives of the study. For this purpose, structured (standardized) schedules were used to elicit the required information from the respondents. Structured or standardized schedules are those in which the response of the respondents is limited to a few given alternative responses, for example, Agree completely, Agree mostly, Agree somewhat, Disagree mostly, Disagree completely, out of which, the respondent was asked to pick one that was closest to his response. This method of measurement or rating is called a Likert Scale. For the present study, a five point likert scale was used. The interview schedules for the respondents consisted of indices pertaining to their:

- General Information - T1, T2, T3 [21 items]
- Perceived cause of Myocardial Infarction – T1 [1 item]
- General Habits – T1, T2, T3 [11 items]
- Medical Assessment-T1 [25 items]
- Social Quality of Life – T1, T2, T3 [29 items]
- Leisure Time Activities – T1, T2, T3 [33 items]
- Psychological Quality of Life – T1, T2, T3 [28 items]
- Physical Quality of life – T1, T2, T3 [19 items]
- Health Locus of Control – T1, T2, T3 [11 items]
- Measurement of Denial – T1, T2, T3 [8 items]
• Respondent's Attitude towards Myocardial Infarction – T1, T2, T3 [8 items]
• Measurement of Respondent's Knowledge about disease and their misconceptions – T1, T2, T3 [55 items]
• Expectations of respondent's post AMI – T1, T2, T3 [29 items]
• Medical Assessment -T2 & T3 [34 items]
• Financial burden – T1, T2, T3 [2 items]
• Return to Work - T2 & T3 [35 items]
• Psychosexual Assessment -T2&T3 [14 items]
• Measuring Quality of Life of Spouse – T1, T2, T3 [32 items]

Separate sets of interview schedules for the respondent for the first and subsequent interviews have been formulated with the help of the guide. Schedules have been made keeping in mind the aims and objectives of the study.

Quality of life scale was prepared after consulting tools that have previously been used. References for the interview schedules have been taken from various earlier models. The main ones have been the Nottingham Health Profile, which was generated in the United Kingdom by Dr Stephen P Mckenna of the Galen Research institute in Manchester in 1984 The EuroQoL developed in the Netherlands by Dr Frank de Charro, Centre for Health Policy and Law, Sanders Institute. The main interview schedule has further been supplemented by the guidelines obtained from the Sickness Impact Profile [SIP] which originated in the United States in 1977 at the John Hopkins University and was developed by Elizabeth Ann Skinner of the School of Hygiene and Public Health. Besides these, specific interview schedules dealing with various aspects of the study there was also a general section of the instruments that was tallied with the General Health Questionnaire [GHQ-28] so as to obtain an international comparability with the findings of the study. The interview schedules have been formulated after detailed
discussions with research guide. The guidelines for the above instruments were adapted from Odd E Havik and John G Maeland.

Opinions and suggestions for specialized inputs have been sought from experts: three sociologists, three psychologists, two cardiologists, and two social workers. Thus, a total of 10 experts contributed to finalize the interview schedule.

The data was collected in three stages

- In hospital, within 5 – 15 days of the myocardial infarction \([T1]\),
- Three months after discharge from the hospital \([T2]\) and
- One year after discharge from the hospital \([T3]\).

At T1, the data regarding the respondent's self assessment of health comprising of socio demographic factors, general habits, social quality of life, leisure time activities, psychological quality of life, and physical quality of life pertaining to his way of life before being afflicted with AMI has been collected by way of interview schedule. This data served as a basis of comparison for the changes that took place in his life post AMI. Besides this, information regarding the immediate impact of the onset of heart disease on the respondent and his family were also elicited. An attending doctor has done medical assessment of the respondent. The locus of control, denial and attitude towards AMI as well as levels knowledge and awareness of cardiac disease, expectations of reduced physical ability, reduced work capacity and reduced emotional control at the time of the AMI have also been measured.

At T2 (three months later) and T3 (one year later), these interview schedules have been re-administered along with reviewing the respondent's work status and his level of sexual activity in order to evaluate the impact of AMI upon his life style. The spouses of the respondents have also been interviewed at all three times. Compiling of case histories over a period of time has followed this.
Data Analysis

After the information, which is called data, has been collected, it needs to be analyzed and interpreted. The purpose of analysis is to summarize the completed information in a manner that they yield answers to the research questions. In order to do so, raw data needs to be coded, classified, and tabulated for drawing statistical inferences etc. For the present study, the data thus collected with the help of interview schedules was coded by preparing a code design by assigning numerical value to each response and then transferred on to the coding cards. Each respondent was assigned a separate set of coding cards. The data was also classified into a few groups each so as to be able to make a comparative study possible.

The data was collected at T1 (N=100), T2 (N=98) and T3 (N=97). Two of the respondents passed away after T1 and one respondent passed away after T2, thus the difference in the number of respondents at T2 and T3. The results and the percentages calculated thereof are based upon the number of respondents who were alive at the given time.

The SPSS, a specialized Statistical Package for the Social Sciences has been used for analysis, which enabled the researcher to perform various statistical procedures like frequency distribution and cross tabulations. Univariate modeling and graphical analysis was done with utmost ease and convenience. Once all the results were obtained, a detailed analysis was undertaken on the basis of Parsons sick role theory. Consequently, interpretations, inferences, implications and conclusions were culled from them.
Chapterization Plan

The thesis has been written in the form of chapters dealing with various aspects of the research prospects, parameters, paradigms and projections. The following is the Chapterization Plan of the study:

Chapter-1:  *Living With Heart Disease…An Introduction*

The first chapter is an introductory one - It outlines the fundamentals of the research problem – the aspects that revolve around the incidence of Acute Myocardial Infarction [AMI], the risk factors that are the harbingers of this particular state of ill health. Illness and disease has been related to the process of post AMI rehabilitation. The Theoretical Perspective, which has been used for the purpose of analysis, has also been presented.

Further, this chapter includes a detailed Review of Literature. These trace researches carried out in the field of medical and sociological research on the process of rehabilitation of an individual afflicted with AMI. It also looks at the evolving rehabilitation processes. It focuses on the inroads made in the field of medicine and the social sciences to arrive at conclusive indicators of the state of health and ill health of the individual who has experienced an AMI. The objectives of the study have also been indicated.

Chapter-2  *Research Methodology*

This chapter delineates the plan of the research work, the tools and methods used for analyzing and interpreting the data.

Chapter-3:  *Profile of the Respondents*

This chapter presents the Socio-demographic profile of the respondents included in the study. These include the socio-cultural, economic background of the respondent as well as the habits and quality of life of the respondent.
before the onset of disease. This chapter forms the basis of further research and analysis.

Chapter-4  The Disease and The Challenge… Medical Status

This chapter is a delineation of the status of the respondent’s condition (medical health status) immediately after being admitted to the hospital with the confirmed diagnosis of an AMI. The medical status at three months and after one year has also been included.

Chapter-5:  On The Threshold…Causes Of AMI

This chapter carries the doctor’s diagnosis ascertaining the cause of heart attack. Further, the perceptions of the respondent as regards the cause of the AMI were also enlisted. Lineages have been drawn on this basis to understand the attitudes and expectations of the respondents.

Chapter-6  At The Cross Roads… Awareness About Disease

This chapter looks at the health locus of control, awareness of heart disease and the attitudes towards AMI. This has been corroborated with the attitude of denial or acceptance of the disease among the respondents.

Chapter-7  Retracing The Footsteps… Post AMI Rehabilitation.

The chapter focuses on the consequences of AMI and changes in the social, psychological, physical, vocational and sexual quality of life of the respondents. The processes of adaptation and adjustments, which the respondents and their families undergo in their everyday lives, have been detailed. The impact on the quality of life of the spouse has also been elucidated.

A statistical analysis as well as a qualitative one in the form of case studies has also been included.
Chapter-8: Transcending The Heart Disease...Summary, Conclusions and Recommendations

This chapter is a projection of the conclusions drawn from the analysis and interpretation of the data collected during the research work and summarizes the research findings. This chapter also elucidates some recommendations made for rehabilitating the patient.